City of Fairfax, Virginia

VSMP GENERAL PERMIT for
Small Municipal Separate Storm Sewer Systems
Permit # VAR040064

YEAR 2 ANNUAL REPORT
July 2014 -June 2015

Public Works - Stormwater
10455 Armstrong Street
Room 200
Fairfax, VA 22030

October 1, 2015

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I. BACKGROUND

In accordance with the requirements of Permit Number VAR040064, an annual report is hereby submitted for the City of Fairfax General Permit for Small Municipal Separate Storm Sewer Systems (MS4). Links to the MS4 Program Plan can be found at www.fairfaxva.gov on the Municipal Separate Storm Sewer System (MS4) webpage.

a. City Name	City of Fairfax, Virginia
b. Permit Number	VAR040064
c. Reporting Period	Year 2: July 1, 2014 to June 30, 2015
d. Modifications of Roles and Responsibilities	There are no modifications to the City's roles and responsibilities during this permit term.
e. New outfalls	There have been no new MS4 outfalls added within the City during the second permit year.

A copy of the signed certification (VSMP General Permit Registration Statement) is attached as Appendix A.

II. SELF ASSESSMENT

The following section provides brief summaries of the status of the Permit Year 2 conditions for each of the six minimum control measures. Additional documentation can be found in the referenced appendices.

Table 1 of the SMS4 General Permit lists four Program Update Requirements to be completed by 24 months after permit coverage (end of Year 2). The City's demonstration of compliance with each of those goals is described in the sections that follow; the table below provides a quick reference for finding the pertinent information for each update.

Program Update Requirement (from Table 1 of SMS4 General Permit)	Permit Section	Compliance Demonstrated in Annual Report Section
Updated TMDL Action Plans (TMDLS approved before July of 2008) – (Special Conditions for Approved Total Maximum Daily Loads (TMDLs) Other Than Chesapeake Bay)	Section I B	Section **II. g.**
Chesapeake Bay TMDL Action Plan – (Special Condition for Chesapeake Bay TMDL)	Section I C	Section **II. g**.
Stormwater Management Progressive Compliance and Enforcement – (Minimum Control Measure 4 – Construction Site Stormwater Runoff Control)	Section II B 5	Section **II. d.**
Daily Good Housekeeping Procedures (Minimum Control Measure 6 – Pollution Prevention/ Good Housekeeping for Municipal Operations	Section II B 6 a	Section **II. f.**

a. Minimum Control Measure #1 – Public Education and Outreach

Minimum Control Measure #1 of the general permit involves the various aspects and methods of Public Education and Outreach. The goals of this minimum control measure are to increase the public's knowledge about steps that can be taken to reduce stormwater pollution and hazards associated with illegal discharges including pertinent legal implications.

i. Status of Compliance

BMP	Task	Permit Year Implement/ Complete	Measurable Goal/ Report Item	Comments
1A	Identify at least 3 high priority water quality issues that contribute to the discharge of stormwater	Year 1*	Lists of education/ outreach activities for the high priority water quality issues, # of people reached	See Appendices B-1a and B-1b

BMP	Task	Permit Year Implement/ Complete	Measurable Goal/ Report Item	Comments
1B	Increase public education on reducing stormwater pollution	Year 1*	Lists of education/ outreach activities related to stormwater pollution, # of people reached	*The Cityscene* newsletter, Links located on City's Website. Also see Appendices B-1a and B-1b

ii. BMP Appropriateness

The identified BMPs and activities associated with this minimum control measure have been performed as anticipated.

iii. Progress towards Goal

There were no new update requirements specified for the second year of the permit under this Minimum Control Measure (see Table 1 of General Permit). All updates and requirements completed during the first year were continued during the second year where appropriate. The City continues to promote public education and involvement through both online newsletters and the City's website, www.fairfaxva.gov. Cityscene newsletters, published monthly by the City of Fairfax, contain articles regarding issues such as contractor debris, recycling, and leaf collection. The City's website is also an excellent educational resource. There, pages can be found addressing resident involvement in protecting water resources, energy saving tips for homeowners, as well as stormwater and stream information. MS4 permits submitted since 2009 are also available on the site. The Northern Virginia Clean Water Partners estimated the total public education and outreach program impressions (number of times an advertisement appeared on a computer, television, or mobile device screen) reached over 4.8 Million for the year. Education and outreach activities are documented in two appendices. Appendix B-1a of this report contains the annual summary of activities conducted by the Northern Virginia Clean Water Partners. Appendix B-1b is the City of Fairfax Environmental Sustainability Committee's Annual Report.

b. Minimum Control Measure #2 – Public Involvement/Participation

Minimum Control Measure #2 of the general permit involves Public Involvement/Participation. The goals of this minimum control measure are to increase the public's involvement through a requirement of the City promoting/sponsoring/etc. a minimum of four local activities annually. These activities are aimed at reducing pollutant loads and improving water quality while providing opportunities for local public participation.

i. Status of Compliance

BMP	Task	Permit Year Implement/ Complete	Measurable Goal/Report Item	Comments
2A	Provide Online Access to the MS4 Program Plan and Annual Reports	Year 1*	Date of posted program, confirmation of formats available, verification of web link	http://www.fairfaxva.gov/government/public-works/stormwater-and-floodplain-management/ms4-permit
2B	Participate in Four Local Activities	Year 1*	List of local activities in which the City has participated	1) City Environmental Sustainability Committee 2) Stream Spring Cleanup 3) Fall Festival 4) Member of the Northern Virginia Clean Water Partners

ii. BMP Appropriateness
The identified BMPs and activities associated with this minimum control measure have been performed as anticipated.

iii. Progress towards Goal
There were no new update requirements specified for the second year of the permit under this Minimum Control Measure (see Table 1 of General Permit). All updates and requirements completed during the first year were continued during the second year where appropriate. The City continues to encourage public participation. The City is a member of the Northern Virginia Clean Water Partners to prevent pollution and manage stormwater. The City has an Environmental Sustainability Committee, composed of six people, that meets the first Wednesday of every month to help the City continue to move in a sustainable direction. The City promotes volunteer work, and every year they hold a Stream Spring Cleanup we well as a Fall Festival promoting environmental awareness. Reports from each of these entities can be found in Appendix B-1a and B-1b. The City's website outlines different BMPs required of private stormwater facilities as well as a Watershed Management Plan. The City participates in the Federal Emergency Management Agency's (FEMA) National Flood Insurance Program (NFIP) and has adopted the Chesapeake Bay ordinance. MS4 permits submitted since 2009 are also available on the City's website. One of the public participation activities, the rain barrel workshop, is explained in Appendix B-2.

c. Minimum Control Measure #3 – Illicit Discharge Detection and Elimination

Minimum Control Measure #3 of the general permit involves the various aspects of illicit discharges. The goals of this minimum control measure is to locate and map all outfall or point of discharge locations, perform field screenings to determine and eliminate sources of illicit discharges and prohibit nonstormwater discharges by ordinance or other legal

mechanisms.

i. Status of Compliance

BMP	Task	Permit Year Implement/ Complete	Measurable Goal/Report Item	Comments
3A	Maintain City Storm Sewer System Map	Year 1*	Dates of storm sewer map updates and the current map	The City has a CIP project which entails system updates and GIS revisions
3B	Maintain MS4 Outfall Data Information Table	Year 4*	Dates of MS4 Outfall Data Information Table updates and current data table	All City maintained outfalls were located during Year 1
3C	Conduct System Screening for Illicit Discharge Detection	Year 1*	Total number of outfalls screened, screening results, and detail of any follow-up actions	Semi-annual screening is performed on all outfalls
3D	Investigate and Address Illicit Discharges	Implement Revised Procedure in Year 2*	Investigation summary of any suspected illicit discharges	All reports in Appendix B-3a
3E	Notify Downstream MS4 Operators of Any Physical Interconnections	Year 2*	List of written notifications to applicable downstream MS4 operators	Notifications were sent to neighboring MS4s

ii. BMP Appropriateness

The identified BMPs and activities associated with this minimum control measure have been performed as anticipated.

iii. Progress towards Goal

There were no new update requirements specified for the second year of the permit under this Minimum Control Measure (see Table 1 of General Permit). All updates and requirements completed during the first year were continued during the second year where appropriate. A potential template in the City of Fairfax Year 1 Annual Report for illicit discharge screening procedures, and an IDDE review was completed in accordance with the year one requirements.

Citizens are told to report illicit discharges to the City of Fairfax Fire Marshall or the Police Department. Contact information can be found on the City's website on the "Quick Reference Numbers" page (http://www.fairfaxva.gov/government/city-manager/quick-reference-numbers). A spill or release report is then completed and the problem is addressed. Spill reports are found in Appendix B-3a.

A table containing total number of outfalls screened, screening results, and details of any follow-up actions can be found in Appendix B-3X of this report. The City sent letters to other MS4s notifying them of potential interconnections between their systems and the City's. The notification letters are in Appendix B-3b.

d. Minimum Control Measure #4 – Construction Site Stormwater Runoff

Minimum Control Measure #4 of the general permit involves Construction Site Stormwater Runoff. This minimum control measure addresses discharges from land disturbing activities by ordinance, published erosion and sediment control standards, site inspection and other legal measures.

i. Status of Compliance

BMP	Task	Permit Year Implement/ Complete	Measurable Goal/Report Item	Comments
4A	Administer City E&S land disturbing permits	Year 1*	# of land disturbing activities, # of acres disturbed, # of permits distributed	8 land disturbing activities, 2.75 acres disturbed, 8 permits distributed. See reports in Appendix B-4b.
4B	City Construction Site Inspection	Year 1*	# of E&S inspections and findings	181 E&S inspections were performed
4C	Provide Training for City Construction Site Inspection Staff	Year 1*	Total # of staff members, # of staff members certified as E &S inspectors	4 E&S inspectors
4D	Ensure VSMP Permits are Issued for Projects Meeting State Established Thresholds	Year 1*	# of grading permits approved, # of VSMP Permits issued	8 grading permits approved, 12 VSMP Permits issued

ii. BMP Appropriateness

The identified BMPs and activities associated with this minimum control measure have been performed as anticipated.

iii. Progress towards Goal

The City of Fairfax continues to provide the following forms for construction sites through the Department of Public Works:

- Inspection Reports,
- Warning Letter,
- Notice to Comply,
- Stop work Order,
- Ordinance Summons, and
- Violation Dismissed Notice.

The above documents can be found in Appendix B-4a. Land Disturbance Permits and BMP agreements are to be approved by the City. An approved grading permit list can be found in Appendix B-4b of this report and a BMP Maintenance agreement can be found in Appendix B-5c.

The City currently employs four DCR E&S certified personnel. There was one Program Update Requirement for Minimum Control Measure #4 to be completed by

24 months after permit coverage. They City met the goal as stated in Table 1 of the General Permit: "Stormwater Management Progressive Compliance and Enforcement."

The City of Fairfax addresses post-construction runoff on new development, development that disturbs 2,500 square feet or greater, but less than one acre, located in a Chesapeake Bay Preservation Area, and new development with more stringent regulatory size thresholds by utilizing inspections and ordinances located in the City of Fairfax Year 1 Annual Report Appendix C-4 and C-5.

The City of Fairfax addresses required design criteria for stormwater runoff controls in accordance with appropriate water quality and quantity design criteria in Part II of 9VAC25-870, any additional applicable state and local design criteria at project initiation, and any department-approved annual standards and specifications by utilizing inspections located in the City of Fairfax Year 1 Annual Report Appendix C-4 and the Public Facilities Manual for the City of Fairfax (available online: http://www.fairfaxva.gov/government/public-works/public-facilities-manual).

The City of Fairfax addresses inspection, operation, and maintenance verification of stormwater management facilities not owned by the MS4 operator by requiring the owner to develop a recorded inspection schedule and maintenance agreement allowable under state or local law or other legal mechanism, implementing a schedule designed to inspect all privately owned stormwater management facilities that discharge into the MS4 at least once every five years, enforcing maintenance responsibilities if maintenance is neglected, and utilizing strategies other than maintenance agreements to promote the long-term maintenance of stormwater control measures by utilizing inspections (example form located in Appendix B-5) and ordinances located in the City of Fairfax Year 1 Annual Report Appendix C-4 and C-5.

The City of Fairfax addresses inspection, operation, and maintenance verification of stormwater management facilities owned by the MS4 operator by providing for long-term operation and maintenance, conducting annual inspections, conducting maintenance as necessary by utilizing inspections (example form located in Appendix B-5) and ordinances located in the City of Fairfax Year 1 Annual Report Appendix C-4 and C-5.

The City of Fairfax addresses MS4 Program Plan Requirements by updating the MS4 Program Plan to include a list of the applicable legal authorities to ensure compliance with the minimum control measure, written policies and procedures utilized during design of stormwater facilities, written inspection policies and procedures utilized during inspections, written procedures for inspection, compliance, and enforcement to ensure maintenance of private and operator owned stormwater facilities, and the roles and responsibilities of the departments in implementing the minimum control measure.

The City of Fairfax addresses stormwater management facilities that discharge into the MS4 by creating an electronic database to include the facility type, owner, location, including latitude, longitude and the sixth order hydrologic unit code, acres

treated, date brought online, name of any impaired water segments within each HUC, date of the most recent inspection, and whether a maintenance agreement exists.

e. Minimum Control Measure #5 – Post Construction Stormwater Management in New Development and Redevelopment

Minimum Control Measure #5 of the general permit involves Post Construction Stormwater Management in New Development and Redevelopment. This minimum control measure addresses post construction stormwater runoff by means of design criteria, inspection and documentation.

i. Status of Compliance

BMP	Task	Permit Year Implement/ Complete	Measurable Goal/Report Item	Comments
5A	Inspect permanent Post-Construction Stormwater Runoff	Year 1*	Annual stormwater management facility inspection summary	Inspection form in Appendix B-5a
5B	Provide Long-Term Maintenance for Operator Owned Facilities	Year 1*	Long-term City maintenance of stormwater management facilities	
5C	Require permanent Management of Post-Construction Runoff	Year 1*	Implement and track post-construction stormwater management	Maintenance & Monitoring Agreement in Appendix B-5c
5D	Create and Maintain an Electronic Database of All Permanent Stormwater Management Facility	Year 1*	Create the required database	2 new facilities cam on-line inYear 2: • 3508 Perry St. – Infiltration Trench • 3999 University- Old Town Square – Permeable Pavement (x2)
5E	Maintain City Facility Inspection Database	Year 1*	Track and Report findings and results of facility inspections	
5F	Provide Training for City Inspection Staff	Year 1*	Stormwater management facility inspection training agenda and attendance roster	
5G	Develop Methods to Address Individual Residential Lot Special Criteria	Year 1*	Explanation of enforceable methods, List of educational resources	

ii. BMP Appropriateness

The identified BMPs and activities associated with this minimum control measure have been performed as anticipated.

iii. Progress towards Goal

There were no new update requirements specified for the second year of the permit under this Minimum Control Measure (see Table 1 of General Permit). All updates and requirements completed during the first year were continued during the second year where appropriate. Performance measures for FY 2014-15 can be found on the City's website (http://www.fairfaxva.gov/government/public-works/performance-measures). The City has samples of letters sent to owners regarding annual maintenance as well as example Inspection Reports and Zoning Enforcement forms in Appendix B-5.

The City has developed stormwater management programs through databases, GIS, and Spreadsheets. These are updated on an as needed basis in order to remain current with field conditions.

The City continues to educate homeowners on the long-term maintenance of stormwater control measures designed to treat runoff from individual residential lots.

f. Minimum Control Measure #6 – Pollution Prevention/Good Housekeeping for Municipal Operations

Minimum Control Measure #6 of the general permit involves Pollution Prevention/Good Housekeeping for Municipal Operations. This minimum control measure requires the implementation of proper training and standard operating procedures for daily operations tasks to be completed while limiting or eliminating the risk of illicit discharges on municipal facilities.

i. Status of Compliance

BMP	Task	Permit Year Implement/ Complete	Measurable Goal/Report Item	Comments
6A	Develop SWPPP's for all Identified "High Priority" Facilities	Complete by end of Year 4	Identify "High-Priority" Facilities in Year 1, Develop SWPPP by Year 4	
6B	Implement Turf and Landscape Nutrient Management Plans (NMPs)	Year 2*	Identify areas in Year 1, implement in accordance with schedule per Section II B 6 c (15% Year 2)	All areas identified & draft plans developed
6C	Provide Training Plan for City Staff and Contractors	Year 1*	Summary of Training Plan, Summary Report of Training Events	A revised draft training plan has been created

BMP	Task	Permit Year Implement/ Complete	Measurable Goal/Report Item	Comments
6D	Develop Written Good Housekeeping and Pollution Prevention Protocols for Daily Municipal operations and Maintenance	Year 2	Written good housekeeping and pollution prevention protocols	

ii. BMP Appropriateness

The identified BMPs and activities associated with this minimum control measure have been performed as anticipated.

iii. Progress towards Goal

There was one Program Update Requirement for Minimum Control Measure #6 to be completed by 24 months after permit coverage as stated in Table 1 of the General Permit: "Daily Good Housekeeping Procedures." The City of Fairfax addresses operations and maintenance activities by minimizing or preventing pollutant discharge from daily operations, equipment maintenance, pesticides, herbicides, and fertilizers utilizing inspections and regulations located in the City of Fairfax Year 1 Annual Report Appendices C-4, C-6, and D. High priority facilities were identified using GIS records. The only high priority facility identified in the City of Fairfax is the property yard at the public works facility. A GIS map of this property can be in Appendix D of the City of Fairfax Year 1 Annual Report.

A GIS analysis was performed to determine all lands owned by the City where nutrients are applied to a contiguous area greater than one acre. A map of these properties can be found in the City of Fairfax Year 1 Annual Report, in Section III of Appendix D. 15% of all identified acres have been covered by draft Turf and Landscape Nutrient Management Plans in accordance with the Year 2 permit requirements.

A draft Training Plan was created, which has been updated to include specific departments and positions who must receive training, as well as a list of example training events. The training plan also includes a section on contractor compliance. Additional explanation can be found in this report in Section **V.a.** (Changes to Correct Deficiencies).

The City of Fairfax encourages recycling and waste reduction, and a recycling rate report is completed every year. The city collects refuse and recyclable items from all single family homes once a week at no charge; businesses are required to provide a recycling system for their occupants, employees, and vendors. Leaf pickup is also provided by the City. Literature and regulations regarding recycling procedures can be found on the City's website on the "Refuse & Recycling" page (http://www.fairfaxva.gov/government/public-works/operations-division/refuse-recycling).

g. Additional Year 2 Permit Requirements

Under the general permit (see table 1) the additional requirements for Year 2 include the Chesapeake Bay TMDL action plan and updates to any TMDL Action Plans (TMDLs approved before July of 2008) - (Special Conditions for Approved Total Maximum Daily Loads (TMDL) Other Than Chesapeake Bay). A TMDL Action Plan can be found in Section VIII and in Appendix B-7.

i. Status of Compliance
A TMDL Action Plan was written for the Chesapeake Bay TMDL requirements. Its primary focus was on the Cycle 1 load 5% load reduction. The TMDL Action Plan is included as Appendix B-7.

ii. BMP Appropriateness
The identified BMPs and activities associated with this minimum control measure have been performed as anticipated.

iii. Progress towards Goal
There were two goals related to TMDL actions plans that did not fall under any of the six Minimum Control Measures. The first was titled "Updated TMDL Action Plans (TMDLS approved before July of 2008) – (Special Conditions for Approved Total Maximum Daily Loads (TMDLs) Other Than Chesapeake Bay)." While TMDLs other than the Chesapeake Bay TMDL exist, none required action more stringent or geographically extensive than the Chesapeake Bay TMDL. Therefore, since the entire city is under the Chesapeake Bay TMDL, that action plan precluded any need for additional action plans.

The second Year 2 goal, titled "Chesapeake Bay TMDL Action Plan – (Special Condition for Chesapeake Bay TMDL)" in Table 1 of the General Permit, was met during Year 2. The City of Fairfax now has an action plan for addressing the 5% decrease in Pollutants of Concern by June 30, 2018. This nine-component action plan is in Appendix B-7.

III. RESULTS OF INFORMATION COLLECTED

The City began a stream monitoring program in 2008, which is conducted by students from the George Mason University Campus in the City of Fairfax. The monitoring sites and results from the stream monitoring program were on hold for the June 2010- July 2011 term, but have been reinstated since. Data for various months has been collected to date to determine trends. Sampling results are included in Appendix C.

IV. SUMMARY OF YEAR THREE ACTION PLAN

Storm water activities planned for the next reporting cycle are as follows:

Minimum Control Measure	Year 3 Activity
MCM #1	• Continued implementation of public education and outreach activities
MCM #2	• Continued implementation of public involvement/participation activities
MCM #3	• Illicit discharge enforcement
MCM #4	• Enforcement of annual inspection for privately owned SWM/BMP facilities within the City of Fairfax. • Develop GIS layer showing SWM/BMP facilities location. • Inspection of all City owned BMP/SWM facilities.
MCM #5	• Continued implementation of Year 1 and 2 goals
MCM #6	• Street Sweeping • Storm drainage outfall maintenance • Storm Drain Marking Program
Additional Operations and Maintenance Activities	• Northfax Storm Drainage (Engineering and Design) • Storm sewer replacement University Drive, Phase I • 300' replacement of failing galvanized storm drainage systems • Storm sewer lining rehabilitation • Neighborhood Drainage Projects- Park Road, Fern Street and Stonewall Ave. • Daniels Run Stream Evaluation • Burke Station Road storm sewer design • Mosby Woods and Foxcroft flooding feasibility studies • Oak Street Stormwater Improvements (Construction of Phase 1)

V. CHANGES TO CORRECT DEFICIENCIES

a. Program Changes

The Training Plan, as part of MCM #6, is being updated (currently in draft form) to include training to insure employees and contractors who apply pesticides and herbicides are properly trained or certified in accordance with the Virginia Pesticide Control Act. The draft Training Plan has also been updated to include specific departments and positions that will require training. Example training courses have been provided as well.

b. Replacement Programs

The City does not intend to replace any of the Minimum Control Measures shown in the general permit.

VI. NOTICE OF RELIANCE ON OTHER ENTITIES

The City of Fairfax will not be relying on any other entity to satisfy any permit obligations.

There are no new or terminated signed agreements between City of Fairfax and any third party to implement all or portions of the permit's minimum control measures. The Virginia Department of Transportation (VDOT) operates a stormwater system that may have interconnections with the City of Fairfax's stormwater system. Letters to other entities documenting this possibility are in Appendix B-3b.

VII. APPROVAL STATUS OF PROGRAMS PURSUANT TO SECTION II C

a. Section I B 9 requirements

There have been no updates completed to the MS4 Program Plan. The new information regarding the TMDL WLA was updated in the 2010-2011 permit cycle, and is on-going.

b. Agreements

There are no new or terminated signed agreements between City of Fairfax and any third party to implement all or portions of the permit's minimum control measures.

VIII. TOTAL MAXIMUM DAILY LOAD INFORMATION

TMDL Project	Pollutant(s)	EPA Approval Date	SWCB Approval Date	Date on Cover of Final Report	City vs County
Accotink Creek (Lower)	E. Coli	12/18/2008	4/28/2009	September 2008	Refers to City twice (once for City developing restoration project and another for radio announcement). Questionable as to whether this applies to City of Fairfax.
Accotink Creek Watershed	Fecal Coliform	5/31/2002	6/17/2004	April 2002	"Headwaters of Accotink Creek are in the City of Fairfax, VA and the creek flows for approx. 10.9 miles before it drains into Lake Accotink…"
Potomac River Watershed PCB	PCB	10/31/2007	4/11/2008	September 28, 2007	Refers to City of Fairfax.
Bull Run	Sediment	9/26/2006	6/27/2007	June 2006	Referred to City of Fairfax and gives WLA.
Difficult Run	Sediment	11/07/2008	4/27/2009	August 2008	City referred to as a point source and says is covered by MS4 permits.
Difficult Run	E. coli	11/07/2008	4/28/2009	April 25, 2008	Refers to City in TMDL, but unclear.
Occoquan River watershed	E. coli	11/15/2006	7/31/2008	August 2006	City has a WLA assigned.
Popes Head Creek	Sediment	9/26/2006	6/27/2007	August 2006	In TMDL, and are "permitted to discharge."

APPENDICES

Appendix A

Certification – VSMP General Permit Registration Statement

City of Fairfax
10455 Armstrong Street
Fairfax, Virginia 22030-3630

October 1, 2015

Bryant Thomas
Regional Water Permits & Planning Manager
Virginia Department of Environmental Quality
13901 Crown Court
Woodbridge, VA 22193

RE: VSMP General permit for small MS4s, VAR040064, City of Fairfax

Dear Mr. Thomas:

In accordance with 4VAC §50-60-1240 Section II(E)(3) and its VSMP small MS4 permit, VAR040064, enclosed are two copies of the City of Fairfax Year One Annual Report. This report summarizes the City's activities taken towards meeting its measurable goals during the period of July 1, 2014 through June 30, 2015.

"I certify under the penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations"

If you have any questions or need additional information, please do not hesitate to contact Ms. Christina Alexander of the Public Works Department at (703) 385-7810.

Sincerely,

.....
Robert Sisson
City Manager

City of Fairfax

10455 Armstrong Street
Fairfax, VA 22030
Department of Public Works
(703) 385-7846
(703) 591-5727 (FAX)

Jeffery Selengut
Department of Conservation and Recreation
900 East Main Street, 8th Floor, Pocahontas Building
Richmond, VA 23219-3558

March 27, 2013

Re: VSMP General Permit Registration Statement for MS4 Stormwater Discharges

Dear Mr. Selengut,

Please find the attached VSMP General Permit Registration Statement for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (DRC Form 199-148) and currently implemented Program Plan for the City of Fairfax.

We understand that DCR will bill the City at a later date for the registration fee. Therefore, the applicable fee form (DCR 199-145) is not included with this submittal.

If you have any questions or require additional information, please contact me at 703-385-7810.

Sincerely,

David Summers, Director of Public Works

DCR
Department of Conservation & Recreation
CONSERVING VIRGINIA'S NATURAL & RECREATIONAL RESOURCES

VSMP GENERAL PERMIT REGISTRATION STATEMENT FOR STORMWATER DISCHARGES FROM SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS [VAR04]

(Please Type or Print All Information)
(The applicable fee specified in Form DCR 199-145 must additionally be submitted to the address given in that form to obtain coverage)

1. **Regulated Small MS4**

Name: City of Fairfax

Type: ☒ City ☐ County ☐ Incorporated Town ☐ Unincorporated Town ☐ College or University
☐ Local School Board ☐ Military Installation ☐ Transport System ☐ Federal or State Facility ☐ Other

Location (County or City): Fairfax, Virginia

2. **Regulated Small MS4 Operator**

Name: City of Fairfax

Address: 10455 Armstrong Street

City: Fairfax State: VA Zip: 22030

3. **Hydrologic Unit Code(s) as identified in the most recent version of Virginia's 6th Order National Watershed Boundary Dataset currently receiving discharges or that have potential to receive discharges from the regulated small MS4:**

020700100402 PL30	Accotink Creek		
020700100401 PL29	Pohick Creek	020700081004 PL22	Difficult Run

4. **Attach a description of the estimated drainage area, in acres, served by the regulated small MS4 discharging to any impaired receiving surface waters listed in the most recent Virginia 305(b)/303(d) Water Quality Assessment Integrated Report, and a description of the land use of each such drainage area.** See Attachment A.

5. **Any TMDL waste loads allocated to the regulated small MS4 (this information may be found at http://www.deq.state.va.us/tmdl/develop.html):** See Attachment A.

6. **The name(s) of any regulated physically interconnected MS4s to which the regulated small MS4 discharges.**

Fairfax County	
George Mason University	Virginia Department of Transportation

7. **A copy of the MS4 Program Plan that includes:**

a. A list of BMPs that the operator proposes to implement for each of the stormwater minimum control measures and their associated measurable goals pursuant to 4VAC50-60-1240, Section II B; that includes:

i. A list of the existing policies, ordinances, schedules, inspection forms, written procedures, and other documents necessary for BMP implementation; and

ii. The individual, department, division, or unit responsible for implementing the BMP;

b. The objective and expected results of each BMP in meeting the measurable goals of the stormwater minimum control measures;

c. The implementation schedule including any interim milestones for the implementation of a proposed new BMP; and

d. The method that will be utilized to determine the effectiveness of each BMP and the program as a whole.

8. List all existing signed agreements between the operator and any applicable third parties where the operator has entered into an agreement in order to implement minimum control measures or portions of minimum control measures.

The City has an annual contract with George Mason University for stream monitoring.

9. The name, address, telephone number and e-mail address of either the principal executive officer or ranking elected official as defined in 4VAC50-60-370.

Robert Sisson, City Manager
City Hall Room 316,10455 Armstrong Street, Fairfax, VA 22030
703-385-7850 Robert.Sisson@fairfaxva.gov

10. The name, position title, address, telephone number and e-mail address of any duly authorized representative as defined in 4VAC50-60-370.

Christina Alexander, Stormwater Resource Engineer
City Hall, Room 200, 10455 Armstrong Street, Fairfax, VA 22030
703-273-3067 Christina.Alexander@fairfaxva.gov

11. Certification: "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations."

Print Name: Robert Sisson Title: City Manager

Signature: [signature] Date: 3/28/13

For Department of Conservation and Recreation Use Only

Accepted/Not Accepted by: _____ Date: _____

Basin _____ Stream Class _____ Section _____ Special Standards _____

Appendix B-1a

MCM #1 – Public Outreach and Education by Northern Virginia Clean Water Partners

Northern Virginia Clean Water Partners

2015 Summary

WORKING TOGETHER FOR HEALTHY STREAMS AND RIVERS

Polluted stormwater runoff is the number one cause of poor water quality in streams and rivers in Northern Virginia. When it rains and water runs off city streets, suburban yards and parking lots, it picks up pesticides, grass clippings, and fertilizer from lawns, bacteria from pet waste, as well as petroleum and oil from driveways and parking lots. Don't forget about the sediment from construction sites or the litter and cigarette butts from the sidewalk. All of this pollution enters the storm drains on the street and is discharged directly to a stream. It is not filtered or sent to a sanitary sewage facility.

To reduce the impacts of stormwater pollution, the Northern Virginia Clean Water Partners aims to change human behaviors in our cities and neighborhoods through a public awareness and education campaign.

The Northern Virginia Clean Water Partners is comprised of a multi-disciplined group of local governments, drinking water and sanitation authorities, and individual businesses working together to address the common issues surrounding pollution prevention, stormwater management, and source water protection.

"Only Rain Down the Storm Drain" is the motto of the partnership.

The primary goal of the partnership is to reduce stormwater-related pollution from entering local waterways.

To meet this goal, the Partners work together to:

- Educate the region's residents on simple ways to reduce pollution around their homes;
- Monitor changes in behavior through surveys and other data collection techniques; and
- Pilot new cost-effective opportunities for public outreach and education.

Members include stormwater program managers, Municipal Separate Storm Sewer System (MS4) Permit managers, communication directors, public information officers, water quality compliance specialists, and environmental planners.

Membership is voluntary and each member pays annual dues to fund the program. The partnership provides a cost-effective means to meet mandatory state and federal stormwater requirements. By working together the partners are able to leverage their available funds to develop and place bilingual educational products with common messages and themes, thereby extending their individual reach.

Regional Stormwater Education Campaign

The Annual Regional Stormwater Education Campaign was initiated in 2003 to assist localities in leveraging funds to achieve common goals regarding stormwater education and outreach and promote consistent messages for high priority water quality issues.

The 2015 campaign satisfied MS4 (Municipal Separate Storm Sewer System) Phase I and Phase II permit requirements for stormwater education and documenting changes in behavior.

For more information visit www.onlyrain.org

ONLY RAIN
(NO CONTAMINENT)
DOWN THE STORM DRAIN

About the Partnership

The Northern Virginia Clean Water Partners is open to any water and sewer district, government agency, or school system in and around Northern Virginia.

2015 Northern Virginia Clean Water Partners

Fairfax County | Arlington County | Loudoun County | Stafford County | Fairfax Water |City of Alexandria | Loudoun Water | City of Fairfax |Town of Herndon | City of Falls Church | Town of Leesburg | Town of Vienna | Town of Dumfries | Doody Calls | Northern Virginia Regional Commission | Virginia Coastal Zone Management Program | George Mason University | Fairfax County Public Schools | Arlington County Public Schools | Northern Virginia Community College | Prince William County Public Schools

2015 Campaign Overview

In 2015, the Northern Virginia Clean Water Partners used television, print, internet advertising and the Only Rain Down the Storm Drain website to distribute messages linked to specific stormwater problems, such as proper pet waste disposal, over fertilization of lawns and gardens and proper disposal of motor oil. In addition to the multi-channel media campaign, educational events hosted throughout the Northern Virginia region also raised awareness and encouraged positive behavior change in residents. The television and internet ads featured the well known national symbol of non-point source pollution; the rubber ducky.

Throughout the campaign year, the Partners made the following efforts to educate the public and promote awareness of stormwater pollution:

- From July 2014 through August 2015, four Public Service Announcements featuring messages on the importance of picking up pet waste and general household stormwater pollution reduction measures aired on 19 English language cable TV channels, and three Spanish speaking channels a total of 6,818 times.

2015 Accomplishments

- The campaign also featured banner ads on Xfinity.com and Cox.com websites that promote the same messages as the cable TV ads.
- The internet banner ads resulted in over 300 click thrus to the www.onlyrain.org website.

- Conducted an online poll survey of 500 Northern Virginia residents to determine the effectiveness of the ads, to reveal any changes in behavior, and to aid in directing the future efforts of the campaign.

- Attended various community events to promote awareness of proper disposal of pet waste and water friendly lawn care tips.
- Continued to update and maintain the Northern Virginia Clean Water Partners website.➤

4,808,970 Total household television impressions*

895,897 Total digital impressions including internet banner ads and in-stream video ads

6,818 Number of times the ads aired on television from July 2014 – June 2015

14,699 Visits to the www.onlyrain.org website

500 Online Annual Survey Responses

**Impressions are the number of times an ad appeared on a single television or computer screen.*

Annual Survey Highlights

Main cause of water pollution...

For the fifth year in a row, the majority of survey respondents stated fertilizers and pesticides as the number one cause of pollution in local streams, the Potomac River and Chesapeake Bay.

Where stormwater goes...

Ninety percent of Northern Virginia residents surveyed stated that stormwater goes to the Potomac River, the Chesapeake Bay, or to local streams and rivers.

90%

Stated the actions of individuals are important in protecting water quality in local streams, the Potomac River, and the Chesapeake Bay is important.

70%

Would be more likely to take actions to reduce the amounts of pollutants they personally put into storm drains, after learning that polluted water runoff is the number one cause of local water pollution.

96%

Believe it is important for local governments to spend more money on protecting water quality.

To assist in determining the effectiveness of the campaign at increasing awareness and changing behaviors, after each campaign year, the Partners conduct an online annual survey of 500 Northern Virginia residents.

Findings in the 2015 survey include:

- 9 percent of the respondents recalled hearing or seeing advertisements that featured rubber duckies on the internet or on TV about reducing water pollution.
- Of those who recalled the ads, nine percent state they now pick up their pet waste more often, four percent state that they now properly dispose of motor oil, and 11 percent state they plan to fertilize fewer times per year.
- The number of respondents choosing "Polluted runoff from streets and parking lots" as the number one cause of pollutions has increased significantly over the past four years from 17 percent in 2011 to 24 percent in 2015.
- 41 percent of respondents knew they live in the Potomac River watershed, up from 38 percent in 2011.
- Interestingly, 82 percent of people surveyed reported that they always pick up after their pet, as compared with 30 percent in previous surveys.
- When shown the Only Rain Down the Storm Drain logo, 60 percent of the respondents recognized the compared to 54 percent in 2013 suggesting that awareness of the logo has increased over time.
- 85 percent of respondents were familiar with rain barrels, and 67 percent stated they already have a rain barrel or are interested in getting one
- 38 percent of respondents were familiar with rain gardens, with 56 percent already having a rain garden or interested in installing one.
- More than half of the respondents (51%) prefer to receive information from online sources. Newspaper (21%) and television (13%) were the next two preferred information sources.

Understanding Behaviors

In addition to capturing responses to questions regarding the effectiveness of the campaign, this year's survey honed in on the current behaviors of Northern Virginia residents as they relate to pet waste management, lawn care, and motor oil disposal. Responses to these questions support the development of future messages and targeted promotion.

The most important reason dog owners are motivated to pick up their pet's waste is because "It's what good neighbors do". The number of respondents choosing "It causes water pollution" as the most important reason to pick it up has fluctuated but remains the third most common reason.

A third of the lawn and garden owners fertilize their lawns two or more times per year, an equal number never fertilize their lawns. Among those who fertilize once a year, 15 percent fertilize in the spring and only eight percent fertilize in the fall. This suggests that there is room to educate more residents of Northern Virginia that fertilizing in the fall is better for local waterways than fertilizing in the spring.

About half of the respondents reported using an herbicide to treat weeds in their lawn or garden.

To better understand behavior related to the application of fertilizer, three new questions about fertilizer were added to the 2013 survey. Among those who fertilize their lawn, 71 percent have never had or were not sure if their soil had been tested for fertility or pH and four-in-ten reported using a slow release N fertilizer. When asked where they get information to decide when and how much fertilizer to apply the top three most commonly selected responses were "Follow directions on the bag" (52%), followed by "Lawn service conducts the applications" (31%), and then "Eyeball it based on size of lawn" (7%).

The majority of respondents take their vehicle to a service station to change their oil (85%) or take used oil to a gas station or hazmat facility for recycling (11%). Less than two percent of Northern Virginians reported storing used motor oil in their garage, placing it in the trash or dumping it down the storm drain.

Only Rain Down the Drain

www.onlyrain.org

2015 Northern Virginia Clean Water Partners

Fairfax County | Arlington County | Loudoun County | Stafford County | Fairfax Water | City of Alexandria | Loudoun Water | City of Fairfax | Town of Herndon | City of Falls Church | Town of Leesburg | Town of Vienna | Town of Dumfries | Doody Calls | Northern Virginia Regional Commission | George Mason University | Virginia Coastal Zone Management Program | Northern Virginia Community College | Fairfax County Public Schools | Arlington County Public Schools | Prince William County Public Schools

Summary prepared by NVRC on behalf of the Partners

For more information contact:
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Senior Environmental Planner
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Fairfax, VA 22031
cmiles@novaregion.org

nvrc
Northern Virginia Regional Commission

Virginia Coastal Zone
MANAGEMENT PROGRAM

Appendix B-1b

MCM #1 – City of Fairfax Environmental Sustainability Committee's Annual Report

CITY OF FAIRFAX
ENVIRONMENTAL SUSTAINABILITY COMMITTEE

2014 ANNUAL REPORT

Environmental Sustainability Committee

Committee Members:

Judy Fraser (Chair)
Tom Kennedy
Tim Killian
Bruce Knight
Susan Crate
Matthew Cooper
Chris McGough
Jon Buttram
Kevin Lowery

TABLE OF CONTENTS

INTRODUCTION

This report summarizes the Environmental Sustainability Committee's (ESC) areas of focus in 2014, identifies current programs and initiatives related to the City's environmental sustainability and makes recommendations for the year ahead.

During 2014, the ESC solidified partnerships within the city, most notably with its closer ties with the City School Board through the creation of a permanent voting position to a designated member of the School Board. The ESC continued to develop community relationships through participation in the Parks and Recreation Strategic Master Plan process, participation on the zoning rewrite advisory Committee and attendance at the Vision Fairfax Mason charrette. The ESC supported City school environmental programs, and collaborated with several area non-profits including Lands and Waters, LEAP-VA and Transition Fairfax. The City Council adopted a resolution that created the ESC in 2009 and this past year the committee reviewed the original resolution and proposed changes based on its experience of the past five years.. The ESC submitted an amendment to the resolution to the City Council which was adopted on November 18, 2014.

COMMITTEE ADMINISTRATION

With the addition of City School Board representative Jon Buttram the ESC now has nine voting members. In October 2014 the ESC also welcomed a student representative from Fairfax High School for the 2014-15 year. The ESC also benefits from the input of several citizens who attend the ESC meetings on a regular basis. Stefanie Kupka, the City's Sustainability Coordinator, is the ESC's staff liaison.

At the revisions to the ESC's resolution that the City Council adopted included several minor changes to the Committee's structure, including adding an elected vice chair position, making the School Board member a voting member of the Committee, and adding the student liaison position. ESC members attended several Parks and Recreation Advisory Board (PRAB) meetings on an ad hoc basis in an informal liaison capacity. The ESC met with the City Council for a work session in February 2014 to present the 2013 Annual Report and stormwater update.

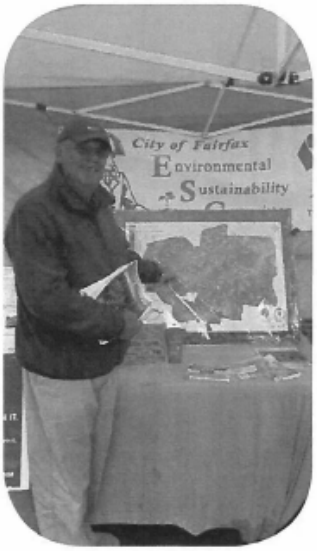
OUTREACH AND EDUCATION

The ESC's outreach initiatives this year included the fourth annual Earth Art Show, Earth Day proclamation, the 4th of July parade and an informational booth at the Fairfax Fall Festival.

This year the Earth Art Show included over 75 pieces of artwork from Daniels Run, Providence and Lanier. The ESC awarded prizes to two students from each school, and with the help of Cameron's, a city bakery, and city staff, held a reception in honor of the artists in our schools.

For the 4th of July parade, the ESC coordinated with Lanier's Eco Club and the non-profit group, Transition Fairfax, to highlight the importance of pollinators. Ted Britt Ford provided an all-electric Ford Focus for the parade.

The ESC's Fall Festival booth was popular with festival visitors. ESC members and citizen supporters distributed handouts on stormwater and pollution concerns, recycling information, free reusable shopping bags and dog waste bags. One noteworthy and popular draw to the booth was a demonstration beehive thanks to ESC volunteer Frank Linton. Mr. Linton spent the day educating visitors about the importance of bees to our environment and food crops. The ESC also provided space for the FHS Green Club and Transition Fairfax, whose volunteers helped staff our booth.



The ESC encouraged citizens to sign up for the new City Alert email, text and phone service and also maintains a page on Facebook as a tool for reaching citizens in addition to the official City website.

City Sustainability Coordinator Stefanie Kupka will be developing and launching a web-based Neighborhood and Workplace Sustainability Challenges in cooperation with several cities across the country under an innovative grant award. The challenges will encourage and recognize residents and businesses for being green, healthy and involved in the community. The development of the challenge website and implementation plan is currently in progress.

SCHOOLS

With the recent appointment of Jon Buttram as the School Board liaison to the ESC, the Committee looks forward to collaborating with the School Board on promoting stewardship of our environment, energy efficiency, and resource protection. Fairfax High School students have re-instituted a Green Club and are executing awareness raising projects for recycling. The non-profit group Lands and Waters is partnering with the high school's Advance Placement (AP) Environmental Studies teacher, Bradley Webster, to support division instruction and experiential learning about stormwater. The goal is to involve students in planning and implementing projects that will reduce the stormwater runoff from the school property.

The ESC is proud of the many environmental achievements and awards garnered by the City's schools including the Virginia Naturally School award, national and regional environmental-related competitions, and local school initiatives, culminating in the school division's second place (Silver Award) for the 2014 Virginia School Boards Association (VSBA) Green Schools Challenge for all Virginia School Divisions with less than 5000 students. The Green Schools Challenge is a friendly competition designed to encourage implementation of specific environmental policies and practical actions that reduce carbon emissions.

STORMWATER MANAGEMENT

The impact of stormwater on our streams, parks and on city coffers remains of utmost concern. The Committee continued its work to both understand and improve awareness in the City of stormwater issues and programs. The ESC used the Fall Festival as an opportunity to increase awareness about the impact citizens have on stream health through proper disposal of pet waste and use of low impact design methods, such as rain barrels and rain gardens, on their property. The city will be hosting a rain barrel workshop on April 11, 2015.

Developing adequate sources for stormwater funding continues to be a significant challenge for the City. The ESC recommends that the City develop a clear policy on the appropriate use of stormwater funds and continues to recommend that the City separate maintenance funds from environmental mitigation funds in the expenditure of the stormwater fund. In 2014 staff received grant funding for extensive stream restoration work and City Council approved matching funds. The ESC fully supports the restoration work and encourages the City Council to maximize the benefit of the work by encouraging other protection measures of adjacent and upstream stream areas. The ESC further encourages the City to investigate how other jurisdictions are funding stormwater management projects and TMDL commitments.

RECYCLING AND SOLID WASTE

Recycling efforts have ramped up in the City this year with the Parks and Recreation Department receiving funding for beginning a recycling program in the City parks and adding a part time position to help with recycling in the parks. Initial responses from residents and park users have been positive, and the ESC supports expanding efforts to encourage recycling and additional methods of reducing waste in and around City parks and properties.

Our staff liaison, Stefanie Kupka, is managing the development of a new Solid Waste Management Plan This Plan will be used to chart a course for administering solid waste programs and policies for the next twenty years. The ESC looks forward to the successful completion of a newly updated plan in 2015.

DEVELOPMENT REVIEW AND COMMENT

The ESC recommends that environmental issues in redevelopment proposals in the City should be addressed early in a proposal's review period. The ESC offers its services to comment on proposed development and redevelopment projects in the City or assist in other ways. Members of the ESC participated in the Vision Fairfax Mason Charrette held on November 6-8, 2014. The ESC looks forward to working with the Mayor, City Council, and staff on ways to address environmental and sustainability issues of proposed development.

PARKS AND RECREATION DEPARTMENT STRATEGIC PLAN

The ESC participated in the Parks and Recreation master plan process. Several concerns of the ESC were addressed in the strategic plan. For example, many of the City parks abut streams and thus play an important role in buffering and protecting our streams. Erosion, loss of vegetative areas, and impervious surface area are some of the most important factors to address. A second concern of the ESC is the extent to which invasive plants have overtaken many of our natural areas and are threatening the viability of native plants and ecosystems. The ESC supports the use of City park environments as optimal locations for raising awareness and education in our community, such as the Daniels Run Elementary habitat restoration. Finally, some of the buildings that Parks and Recreation oversees are aging and the ESC strongly supports energy conservation improvements and safe removal, containment, and disposal of toxic materials (e.g., lead-based paint, asbestos). The ESC looks forward to working with the Parks and Recreation Department staff and the Parks and Recreation Advisory Board in developing implementation steps for the approved strategic master plan that will further sustainability goals and achievements of the Parks and Recreation Department.

TREES, LAND AND PARK STEWARDSHIP

In September the ESC the City's manager of Parks, Gregg Tonge, and Public Works staff member and certified arborist, CJ Crabtree. The ESC appreciated the time of these staff members to help the ESC understand better how the City's publicly owned land is managed. While recognizing that the two departments, Public Works and Parks and Recreation, have separate missions, the ESC strongly supports the creation of a full time arborist position to assist both departments with the care and management of City owned trees, and who would be tasked with creating a common set of tree management guidelines. Similar coordination of the care and management of public land, including mowing, planting, integrated pest management, mulching, water management and resource protection will prove worthwhile for maximizing the value of City expenditures and labor.

ENERGY EFFICIENCY

The City teamed up with a non-profit group, LEAP-VA to offer homeowners low-cost energy home checkups or audits. Over 30 homeowners participated in the program. The ESC looks forward to analyzing the results of the program during 2015.

CONCLUSION

ESC members are residents who have volunteered to serve on the ESC in order to help the City improve its environmental sustainability. At the close of its fifth year, the ESC has become better known and more visible throughout the community, but the City's sustainability ultimately will rely on proactive leadership and informed citizenry. To these ends, the ESC recommends greater outreach on issues of the environment and sustainability that will encourage the City and its citizens to become active partners in protecting and supporting our natural resources in the local ecosystem. The ESC appreciates input from residents and welcomes all interested parties at ESC meetings. We thank the City Council and Mayor for their continuing support and staff members for their attention to our concerns as we all work together to improve the current and future sustainability of the City and its residents.

2015 WORK PLAN

In 2015 the ESC plans to address the following priorities:

- Increase stakeholder knowledge of the city's natural resources
- Current and future stormwater management actions and policies
- Development and implementation of an invasive plant species management plan
- Alternative energy and energy efficiency education and opportunities to citizens such as the LEAP audits.
- Identify more opportunities to educate citizens on environmental and sustainability issues. For example, stormwater management, invasive plants, non-native plants, low impact landscaping, and recycling
- School environmental program support
- Better bike facilities including marked lanes, paths and convenient bike parking
- Support for beekeeping and native pollinator programs
- Support the Sustainability Challenges grant implementation
- Review and comment on City policies such as the revision to the City's zoning code, and development of the new Solid Waste Management Plan, and land use and development proposals
- Identify ways to reduce the use of bottled water and one-time-use shopping bags in the city

Appendix B-2

MCM #2 – Rain Barrel Workshop

Intro text
Make your own rain barrel at Green Acres Community Center on August 23rd.

Rain Barrel Workshop
Saturday, August 23rd, 10:00 a.m. – 12:00 p.m.
Green Acres Community Center
4401 Sideburn Road, Fairfax, VA 22030
For more information and to register:
http://www.arlingtonenvironment.org/be-green/live-green/barrel/

The City of Fairfax will be hosting a Build Your Own Rain Barrel Workshop, Saturday August 23rd from 10am-12pm at the Green Acres Community Center. In only two hours, you will build your own rain barrel to take home as well as learn about the care and maintenance of your new rain barrel. The workshop only costs $55, about half the retail cost of a rain barrel. This workshop is sponsored by the Northern Virginia Soil and Water Conservation District. Space is limited. Register now at the following link! http://www.arlingtonenvironment.org/be-green/live-green/barrel/

Appendix B-3a

MCM #3 – Hazardous Material Spill Reports

CITY OF FAIRFAX FIRE DEPARTMENT
OFFICE OF THE FIRE MARSHAL
SPILL OR RELEASE REPORT
FOR HAZARDOUS MATERIAL INCIDENT

Date of Event: 7/6/2014 **Date of Report:** 7/8/2014

Time of Event: 1021 **Location of Incident:** 3615 Cornell Rd

F.D. Incident Number: 20141870751 **Companies Responding:** 3, 40

Investigation Number: 20141870751

Type of Incident: Gasoline Odor

Product released: Poss. Gasoline **Amount:** UNK

What happened to cause the release or spill: Unknown Cause

Responsible Party: Unknown

How many injuries occurred during this event if any: 0 Civilians, 0 Fire Fighters.

What area was affected by this event? Sanitary sewer from Cornell Rd to Tedrich Blvd

What corrective action has been initiated? Problem self- corrected with the flow of sewage

Were facility procedures violated? UNK

Was a Fire Code Notice of Violation Issued: N **Section:** N/A

Photos taken: N **Evidence Taken:** N

Weather Conditions: Mostly Cloud, 72 °F

Status: Self resolved **Final Action:** Closed

What other agencies have been notified: Public Works

F.D. Units on scene: FE403, T403, M403, HM440, BC443, FM441, FM442

Amount expended: $ 0.0 **Amount Recovered:** $ 0.0

Total property loss: $ 0

This report filed by: Lt. David Whitacre

Signature of Investigator: _____ **Date:** _____

Report reviewed by: _____ **Date:** _____

Investigation Report Supplement

Incident Number : 2014 187 0751	**Incident Date: 7/6/2014**	**Supp. Number : 01**
Investigator: Lt. D. Whitacre		**Supp. Date: 7/8/2014**

On Sunday July 6, 2014 at approximately 1100 hrs., I was requested to respond and assist in the investigation of a gasoline odor coming from the sewer in the area of 3615 Cornell Rd. By the time I arrived on the scene, Fire Department units had checked several manholes and narrowed down the scope of the affected area to the sanitary sewer between 3410 Pickett Rd and the dead end of Tedrich Blvd.

Out of an abundance of caution, The Tank Farm complex drains were checked and had no odor or readings in the last manhole on the property. Based on the farthest location of upstream odor and readings, the problem seemed to originate in the dead end portion of Tedrich Blvd. A door to door check of that area turned up no evidence of the source.

A check of the manhole at the dead end of Tedrich Blvd. on 7/7/2014 revealed that the odor had dissipated.

Signature: _____ Date: _____

CITY OF FAIRFAX FIRE DEPARTMENT
OFFICE OF THE FIRE MARSHAL
SPILL OR RELEASE REPORT
FOR HAZARDOUS MATERIAL INCIDENT

Date of Event: 8/5/2014 **Date of Report:** 8/10/2014

Time of Event: 0930 **Location of Incident:** 10521 Fairfax Blvd

F.D. Incident Number: **Companies Responding:**

Investigation Number: FM2014218001

Type of Incident: Fuel Spill

Product released: Hydraulic fluid **Amount:** 45 Gallons

What happened to cause the release or spill: Broken Hose

Responsible Party: American Disposal Services

How many injuries occurred during this event if any: 0 Civilians, 0 Fire Fighters.

What area was affected by this event? Parking Lot

What corrective action has been initiated? Clean-up with absorbant

Where facility procedures violated? No

Was a Fire Code Notice of Violation Issued: yes **Section:** 5003.3.1.4

Photos taken: N **Evidence Taken:** N

Weather Conditions: Clear, °F

Status: Closed by Report **Final Action:** Closed

What other agencies have been notified: No

F.D. Units on scene: None

Amount expended: $ 0.0 **Amount Recovered:** $ 0.0

Total property loss: $

This report filed by: Capt Gary Orndoff

Signature of Investigator: _____ **Date:** _____

Report reviewed by: _____ **Date:** _____

CITY OF FAIRFAX FIRE DEPARTMENT
OFFICE OF THE FIRE MARSHAL
SPILL OR RELEASE REPORT
FOR HAZARDOUS MATERIAL INCIDENT

Date of Event: 9/23/2014 **Date of Report:** 9/25/2014

Time of Event: 0800 **Location of Incident:** 10383 Fairfax Blvd

F.D. Incident Number: 20142660788 **Companies Responding:** RE433, M433

Investigation Number: 20142660788

Type of Incident: Vehicle crashed into fuel dispenser

Product released: Gasoline **Amount:** < .5 gallon

What happened to cause the release or spill: Vehicle struck a fuel dispenser

Responsible Party:

How many injuries occurred during this event if any: 0 Civilians, 0 Fire Fighters.

What area was affected by this event? Fuel dispensing island

What corrective action has been initiated? Fuel Dispenser destroyed. Owner advised to have lines tested and proper permits before installing and using new dispenser

Were facility procedures violated? NO

Was a Fire Code Notice of Violation Issued: N **Section:**

Photos taken: Y **Evidence Taken:** N

Weather Conditions: Scattered Clouds , 47°F, Winds NNW 3.5 mph

Status: Closed - Report **Final Action:** Closed

What other agencies have been notified: None

F.D. Units on scene: RE433, M433

Amount expended: $ 0.0 **Amount Recovered:** $ 0.0

Total property loss: $ $10,000

This report filed by: Lt. Dave Whitacre

Signature of Investigator: _____ **Date:** _____

Report reviewed by: _____ **Date:** _____

CITY OF FAIRFAX FIRE DEPARTMENT
OFFICE OF THE FIRE MARSHAL
SPILL OR RELEASE REPORT
FOR HAZARDOUS MATERIAL INCIDENT

Date of Event: 11/19/2014 **Date of Report:** 12/4/2014

Time of Event: 0911 **Location of Incident:** 3806 Richard Ave

F.D. Incident Number: 20143231053 **Companies Responding:** E403, RE433, BC443, M433, HM440< HMS440, RS411

Investigation Number: 20143231053

Type of Incident: Fuel Spill

Product released: Fuel Oil **Amount:** 260 gallons

What happened to cause the release or spill: Improper filling technique/overfill caused a tank failure

Responsible Party: Fannon Heating and Oil

How many injuries occurred during this event if any: 0 Civilians, 0 Fire Fighters.

What area was affected by this event? Basement of SFD

What corrective action has been initiated? Fuel clean up and remediation by Total Environmental Concepts

Were facility procedures violated? No

Was a Fire Code Notice of Violation Issued: No **Section:**

Photos taken: Y **Evidence Taken:** N

Weather Conditions: Clear, 22 °F

Status: Closed **Final Action:** Closed

What other agencies have been notified:

F.D. Units on scene: E403, RE433, BC443, M433, HM440, HMS440, RS411

Amount expended: 0$ **Amount Recovered:** 0$

Total property loss: $20,000

This report filed by: Lt. David Whitacre

Signature of Investigator: _____ **Date:** _____

Report reviewed by: _____ **Date:** _____

On November, 19, 2014, Fannon Employee Ivory Long arrived at the above address to complete a fuel oil delivery. Mr. long stated that he put the delivery hose in the fill pipe and commenced fueling. He stated that never heard a whistle and did not feel any air movement on the vent pipe. At 170 gallons, Mr. Long stated he stopped the delivery and checked the ticket to make sure of the delivery amount. He stated it was a "fill" ticket, no specified amount. He stated he continued with the delivery at that time. A short while later, he stated the home owner came outside to his location and told him to stop the delivery because there was fuel oil all over the basement.

I spoke with Ms. Sig Schipper, the resident at 3806 Richard Ave. Ms. Schipper stated that there has been no noticeable tank leak prior to today. She further stated that her heat went off yesterday and a technician from Fannon had come to look at her furnace. At the time of the service, there was reported to be ¼ tank of fuel in the 275 gallon tank. The technician repaired the furnace by turning on a switch that was off for unknown reason.

The scene was turned over to Total Environmental Concepts for remediation. (703) 567-4346

This report filed by: Lt. David Whitacre

Signature of Investigator: _____ **Date:** _____

Report reviewed by: _____ **Date:** _____

CITY OF FAIRFAX FIRE DEPARTMENT
OFFICE OF THE FIRE MARSHAL
SPILL OR RELEASE REPORT
FOR HAZARDOUS MATERIAL INCIDENT

Date of Event: 4/9/2015 **Date of Report:** 4/10/2015

Time of Event: 1759 **Location of Incident:** 10485 Fairfax Blvd

F.D. Incident Number: 20150992395 **Companies Responding:** RE433, FM42

Investigation Number: 20150992395

Type of Incident: Diesel Spill

Product released: Diesel Fuel **Amount:** <10 Gallons

What happened to cause the release or spill: Malfunctioning Auto shut off at nozzle and or inattention by fueler

Responsible Party: Station Owner Fernando Lopez

How many injuries occurred during this event if any: 0 Civilians, 0 Fire Fighters.

What area was affected by this event? Parking lot, fuel sevice area

What corrective action has been initiated? Spill cleaned up, nozzle inspected, ROI for several training issues written

Were facility procedures violated? Yes

Was a Fire Code Notice of Violation Issued: No **Section:**

Photos taken: Y **Evidence Taken:** Y

Weather Conditions: Light Rain, 42 °F

Status: Closed **Final Action:**

What other agencies have been notified: None

F.D. Units on scene: RE433, FM42

Amount expended: $ **Amount Recovered:** $

Total property loss: $

This report filed by: Lt. David Whitacre

Signature of Investigator: _____ **Date:** _____

Report reviewed by: _____ **Date:** _____

Investigation Report Supplement

Incident Number : 20150992395	Incident Date: 4/9/2015	Supp. Number : 01
Investigator: Lt. D. Whitacre		Supp. Date: 4/10/2015

At approximately 1655 on April 9, 2015, I was contacted by Capt. Gary Orndoff to respond to a fuel spill at 10485 Fairfax Blvd. I responded back to the city and arrived at approximately 1745. When I arrived, I observed evidence of a spill in the area of pump #9. The spill had extended from the pump island towards Fairfax Blvd. , but had not reached the street of storm drains. There was a bag over the Diesel nozzle for pump #9, but otherwise, there were no clean-up/mitigation efforts being performed. The business was still operating and fuel sales were on-going.

I made contact with the only employee on site, Mr. Basu Pandey who was at the cash register. Mr. Pandey spoke very broken English and we were not able to effectively communicate. I asked for the owners phone number, which Mr. Pandey then pointed to a number on a phone list. I contacted Mr. Fernando Lopez at 202-277-3695 and advised him of the spill. He stated that he knew nothing about the spill and would be on the way to the scene.

I then requested the assistance of an Engine Company from DSPC. RE433 arrived a short time later and proceeded to apply absorbent material to the spill. We also asked the operator to cease sale of fuel until we could contain the problem. We could not find any containment or spill control material on-site. I asked Mr. Pandey to provide me with the spill prevention plan and spill log, which he was not able to do.

Mr. Lopez arrived a short time later. I explained all that I knew at the time to Mr. Lopez. and him to retrieve the spill containment equipment. He returned with a small bag of pads and booms which would not have been sufficient to contain the spill. Product from the spill did not reach the storm sewer or the highway.

After the spill was contained and the area isolated, I asked Mr. Pandey to provide me with the receipt associated with the spill. Mr. Pandey produced a receipt for the purchase of 19.66 gallons of diesel fuel from pump #9 at 1634 hours. I obtained a copy of the receipt for my investigation.

Mr. Lopez advised me that the Capitol Petroleum Group has staff capable of cleaning up the spill and they were on the way.

At this time I advised Mr. Lopez that the Fire Prevention Code Permit for the storage and sale of Flammable/Combustible Liquids was suspended for the following reasons:

- Inadequate spill mitigation training
- Not enough absorbent on-site
- No method to isolate the spill area
- No identifiable approved Spill Prevention Plan

Upon my departure, the spill was contained with absorbent material and the fuel pumps isolated with fire line tape.

Signature: _____ Date: _____

Investigation Report Supplement

Incident Number : 2015 -099 2395	Incident Date: 4/9/2015	Supp. Number : 02
Investigator: Lt. David Whitacre		Supp. Date: 4/10/2015

On April 10, 2015 at approximately 0620, I stopped by 10485 Fairfax Blvd. to follow-up on the spill from the previous day. Upon my arrival, I observed the pumps in full operation. I made contact with the operator on duty ("Chandra"), and attempted to ascertain why the pumps were on. Chandra could not give an explanation for why the pumps were on, so advised him to turn them off and place the pumps out of service. I further asked Chandra what he would do if five gallons of gasoline were spilled on the fuel pad. Chandra gave no indication of any knowledge related to spill mitigation of proper notification procedures.

Later in the morning, I followed up on an e-mail from Permit Tech Clendenin related to the spill. The e-mail identified Deidra Smith as the person that was using pump #9 when the spill occurred. I called Ms. Smith and arranged a time to meet with her to discuss what happened. I met with Ms. Smith later that morning. Ms. Smith advised that she was almost out of fuel (low fuel light was on) when she pulled into the service station. She started pumping fuel, and was then distracted by her infant son who was in the vehicle crying. When Ms. Smith realized it was taking longer than usual to fill her car up, she got out of the car and realized fuel was spilling on the ground. She grabbed the nozzle and turned it off, getting diesel fuel all over her clothing. Ms. Smith advised that when she went inside the store to report the spill to the cashier, he seemed disinterested in doing anything about the problem. Ms. Smith also stated that a witness, Dan Morris (703-929-8348) was also advising the cashier that someone needed to be called to deal with the issue, the cashier again seemed disinterested. Ms. Smith then left and reported the spill to our office.

Ms. Smith's vehicle is a 2013 VW Jetta 3VWPL7AJ1DM637680 and has a reported tank capacity of 14.5 gallons.

Deidra Smith
10351 Fitzpatrick La
Oakton Va.

A meeting with Capitol Petroleum Group and Mr. Lopez took place at 1400 on this date. Capitol Petroleum Group and Mr. Lopez vowed to have all of the issues identified corrected by Monday April 13, 2015.

Signature: _____ Date: _____

Investigation Report Supplement

Incident Number : 2015 -099 2395	**Incident Date: 4/9/2015**	**Supp. Number : 03**
Investigator: Lt. David Whitacre		**Supp. Date: 4/13/2015**

On April 13, 2015, I met with representatives from Capitol Petroleum Group and Mr. Lopez at the gas station. I was provided with a copy of the complete Spill Prevention Plan, documentation of the servicing of the nozzle on Pump #9, and documentation of the proper clean up and disposal of the hazardous waste. I was assured that all employees had received the proper training and the spill mitigation equipment was on site.

At this time, the Fire Prevention Code Permit was re-instated.

Signature: _____ Date: _____

CITY OF FAIRFAX FIRE DEPARTMENT
OFFICE OF THE FIRE MARSHAL
SPILL OR RELEASE REPORT
FOR HAZARDOUS MATERIAL INCIDENT

Date of Event: 6/1/2015 **Date of Report:** 6/3/2015

Time of Event: 1922 **Location of Incident:** 10485 Fairfax Blvd

F.D. Incident Number: 20151522634 **Companies Responding:** RE433

Investigation Number: 20151522634

Type of Incident: Fuel Leaking from a passenger vehicle

Product released: Gasoline **Amount:** < 5 gallons

What happened to cause the release or spill: Leak from vehicle fuel tank

Responsible Party: Angela Peterson

How many injuries occurred during this event if any: 0 Civilians, 0 Fire Fighters.

What area was affected by this event? Parking Lot

What corrective action has been initiated? Leak contained, Absorbant placed on product, material removed for proper disposal

Were facility procedures violated? No

Was a Fire Code Notice of Violation Issued: N **Section:**

Photos taken: **Evidence Taken:**

Weather Conditions: Mostly cloudy, 71 °F

Status: Closed **Final Action:** Closed - Report

What other agencies have been notified: None

F.D. Units on scene: RE433

Amount expended: $ 0.0 **Amount Recovered:** $ 0.0

Total property loss: $

Vehicle pulled into the gas station leaking fuel. Station personnel contained the leaking fuel with absorbent and secured the immediate area. Notification to the Fire Department was made.

This report filed by: Lt. David Whitacre

Signature of Investigator: _____ **Date:** _____

Report reviewed by: _____ **Date:** _____

Appendix B-3b

MCM #3 – Notices to Potential Interconnected Stormwater Systems

City of Fairfax

10455 Armstrong Street
Fairfax, VA 22030
Department of Public Works
(703) 273-33067
(703) 591-5727 (FAX)

Virginia Department of Transportation
Mr. Roy T. Mills
Location and Design Division
State Stormwater Program Planner
(804) 786-9013

October 2015

Subject: MS4 Permit; Notice of Potential Physically Interconnected Stormwater Systems

Dear Mr. Mills,

The City of Fairfax is a Phase II small MS4 located in Fairfax County, VA. The City of Fairfax is covered under the Virginia Stormwater Management Program (VSMP) General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems. (Registration VAR040064)

The purpose of this letter is to notify you of the potential interconnected stormwater systems operated by VDOT, and the City of Fairfax. Under the MS4 Permit requirements, the City of Fairfax is required to notify all downstream regulated MS4 stormwater systems that are physically interconnected. At this time the City of Fairfax has not identified any points where the City discharges into any VDOT regulated stormwater systems, therefore this is just a notification and no action on your part is required.

If you have any questions or need any additional information please feel free to contact me.

Sincerely,

Christina Alexander
Stormwater Resource Engineer
(703)273-3067
Christina.Alexander@fairfaxva.gov

City of Fairfax

10455 Armstrong Street
Fairfax, VA 22030
Department of Public Works
(703) 273-33067
(703) 591-5727 (FAX)

County of Fairfax
Stormwater Planning Division
12000 Government Center Pkwy.
Fairfax, VA 22035

October 2015

Subject: MS4 Permit; Notice of Potential Physically Interconnected Stormwater Systems

Dear MS4 Permit Manager,

The City of Fairfax is a Phase II small MS4 located in Fairfax County, VA. The City of Fairfax is covered under the Virginia Stormwater Management Program (VSMP) General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems.

The purpose of this letter is to notify you of the potential interconnected stormwater systems operated by Fairfax County, and the City of Fairfax. Under the MS4 Permit requirements, the City of Fairfax is required to notify all regulated MS4 stormwater systems that are physically interconnected. At this time the City of Fairfax has not identified any points where the City discharges into any Fairfax County regulated stormwater systems, therefore this is just a notification and no action on your part is required.

If you have any questions or need any additional information please feel free to contact me.

Sincerely,

Christina Alexander
Stormwater Resource Engineer
(703)273-3067
Christina.Alexander@fairfaxva.gov

City of Fairfax

10455 Armstrong Street
Fairfax, VA 22030
Department of Public Works
(703) 273-33067
(703) 591-5727 (FAX)

George Mason University
Facilities Planning Division
4400 University Dr.
Fairfax, VA 22032
(703) 993-2520

October 2015

Subject: MS4 Permit; Notice of Potential Physically Interconnected Stormwater Systems

Dear MS4 Permit Manager,

The City of Fairfax is a Phase II small MS4 located in Fairfax County, VA. The City of Fairfax is covered under the Virginia Stormwater Management Program (VSMP) General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems.

The purpose of this letter is to notify you of the potential interconnected stormwater systems operated by George Mason University, and the City of Fairfax. Under the MS4 Permit requirements, the City of Fairfax is required to notify all downstream MS4 stormwater systems that are physically interconnected. At this time the City of Fairfax has not identified any points where the City discharges into any George Mason University regulated stormwater systems, therefore this is just a notification and no action on your part is required.

If you have any questions or need any additional information please feel free to contact me.

Sincerely,

Christina Alexander
Stormwater Resource Engineer
(703)273-3067
Christina.Alexander@fairfaxva.gov

Appendix B-4a

MCM #4 – Inspection Report, Warning Letter, Notice to Comply, Stop Work Order, Ordinance Summons, and Violation Dismissed notice

Filing No: SW14XXXX

City of Fairfax
Department of Public Works
10455 Armstrong St, Room 200
Fairfax, VA 22030
703 273 6073

Date Issued:
07/01/14

VSMP INSPECTION REPORT

To:

An inspection of the site at **Location/Address** on **07/01/14** revealed the presence of the following violation(s):

The following corrections are required:

Notice is hereby given that the violations stated above shall be corrected on or before **07/01/14** at **9:00 AM**. The site will be reinspected at that time.

Failure to address the above violation(s) will result in a Warning Letter, Notice to Comply and/or Stop Work Order being issued. Please contact this department if there are any questions.

VSMP Inspector Satoshi Eto

VSMP Administrator Christina Alexander

A copy of this notice will be posted at the site and/or emailed to the Operator, AND a copy sent by Certified Mail.
White: Permit Holder/Addressee Yellow: Inspector Pink: File

Filing No: SW14XXXX

City of Fairfax
Department of Public Works
10455 Armstrong St
Fairfax, VA 22030
703 273 6073

Date Issued:
07/01/14

VSMP WARNING LETTER

To:

An inspection of the site at **Location/Address** on **07/01/14** revealed the presence of the following violation(s):
A VSMP Inspection Report was sent on 07/01/14.

The following corrections are required:

Notice is hereby given that the violations stated above shall be corrected on or before **07/01/14** at **9:00 AM**. The site will be reinspected at that time.

Failure to comply with this notice will result in a Notice to Comply or Stop Work Order, or other legal enforcement action by the City of Fairfax to implement the appropriate corrections. Please contact this department if there are any questions.

VSMP Inspector Satoshi Eto

VSMP Administrator Christina Alexander

A copy of this notice will be posted at the site and/or emailed to the Operator, AND a copy sent by Certified Mail.
White: Permit Holder/Addressee Yellow: Inspector Pink: File

Filing No: SW14XXXX

City of Fairfax
Department of Public Works
10455 Armstrong St
Fairfax, VA 22030
703 273 6073

Date Issued:
07/01/14

VSMP NOTICE TO COMPLY

To:

An inspection of the site at **Location/Address** on **07/01/14** revealed the presence of the following violation(s):
A VSMP Inspection Report / Warning Letter was sent on 07/01/14.

The following corrections are required:

Notice is hereby given that the violations stated above shall be corrected on or before **07/01/14** at **9:00 AM**. The site will be reinspected at that time.

Failure to comply with this notice will result in a Stop Work Order and/or other legal enforcement action by the City of Fairfax to implement the appropriate corrections. Please contact this department if there are any questions.

VSMP Inspector Satoshi Eto

VSMP Administrator Christina Alexander

A copy of this notice will be posted at the site and/or emailed to the Operator, AND a copy sent by Certified Mail.
White: Permit Holder/Addressee Yellow: Inspector Pink: File

Filing No: SW14XXXX

City of Fairfax
Department of Public Works
10455 Armstrong St
Fairfax, VA 22030
703 273 6073

Date Issued:
07/01/14

VSMP STOP WORK ORDER

To:

An inspection of the site at **Location/Address** on **07/01/14** revealed the presence of the following violation(s).
A VSMP Inspection Report / Warning Letter / Notice to Comply was sent on 07/1/14

You are hereby ordered to stop all land-disturbing activities on the above referenced project until the specified corrective measures have been taken. If work is not begun to correct this violation by **07/01/14**, further legal action will be taken. Upon completion of the corrective action, the order shall be immediately lifted. Continuing land disturbing activities in disregard of this Order shall constitute a violation of City Code Sec 110-291(e).

The following corrections are required:

Please contact this department if there are any questions.

VSMP Inspector Satoshi Eto

VSMP Administrator Christina Alexander

A copy of this notice will be posted at the site and/or emailed to the Operator, AND a copy sent by Certified Mail.
White: Permit Holder/Addressee Yellow: Inspector Pink: File

Filing No: SW14XXXX

City of Fairfax

Date Issued: **07/01/14**

VSMP ORDINANCE SUMMONS

To:

You are charged with violating City Code as follows:

Location of Violation: **Location/Address**
Description of Violation:

Violation of:

- ☐ City Code Sec 110-287(a)1 – Failure to obtain VSMP Permit prior to engaging in land disturbing activity. - $2500 / violation / day
- ☐ City Code Sec 110-287(d)1 – VSMP permit non-compliance - $2500 / violation / day
  Description:
- ☐ City Code Sec 110-291(d) – Continued land disturbing activity in disregard of Stop Work Order issued by Administrator. - $2500/violation / day
- ☐ City Code Sec 110-294(a) – Illicit discharges - $1000 / violation / day

Penalty:

Cumulative Penalty: violation dates & types

You are required to respond by 07/01/14 in one of the following ways:

1. **To Pay Penalty and Waive Your Right to a Hearing:**
   - Check the "Admit Violation" or "No Contest" box below; checking either of these boxes and signing this ticket is a waiver of trial, is an admission of liability, and has the same force and effect as a court judgment, but is not a criminal conviction for any purpose.
   - Correct the violation and certify that the violation has been corrected by signing below;
   - Make check payable to City of Fairfax. Print filing number noted above on the check. Payment may be made by mail or in person, at; Treasurer's Office, City Hall, 10455 Armstrong Street, Room 208, Fairfax, VA 22030.
2. **To stand trial for the violation(s) shown on this summons:**
   - Check the "Contest in Court" box below and mail this completed notice to the Dept of Public Works, City Hall, 10455 Armstrong St, Fairfax, VA 22030.

FAILURE TO RESPOND AS NOTED ABOVE WILL RESULT IN THE ISSUANCE OF A SUMMONS TO APPEAR IN COURT

COMPLETE AND SIGN: ☐ Admit ☐ No Contest ☐ Contest in Court

Name:_____

I hereby certify under penalty of law, that I have answered as indicated above,
and have corrected the violation that I have admitted to or for which I have pleaded no contest.

Signature:_____ Date:_____

Certificate of Service

I personally observed the violation noted and state that I am an employee of the Department of Public Works, that a true copy of this ticket was ☐mailed to the last known address of the respondent or the respondent's agent and/or ☐posted at the site of the infraction, and know this ticket to be true to the best of my knowledge.

Signature:_____ Date:_____

Director of Public Works_____ Date:_____

A copy of this notice will be posted at the site and/or emailed to the Operator, AND a copy sent by Certified Mail.
White: Permit Holder/Addressee Yellow: Inspector Pink: File

Filing No: SW14XXXX

City of Fairfax
Department of Public Works
10455 Armstrong St
Fairfax, VA 22030
703 385 7828

Date Issued:
07/01/14

Violation Dismissed

To:

A reinspection of the site at **Location/Address** on **07/01/14** revealed that the following violation(s) have been corrected to the satisfaction of the Office of Site Inspections.

Your cooperation in this matter is appreciated and Public Works will continue to monitor this site to ensure compliance with VSMP requirements.

VSMP Inspector Satoshi Eto

VSMP Administrator Christina Alexander

A copy of this notice will be posted at the site and/or emailed to the Operator, AND a copy sent by Certified Mail
White: Permit Holder/Addressee Yellow: Inspector Pink: File

Appendix B-4b

MCM #4 – List of Approved Grading Permits

DCR / Grading Permits / Report

February

Project Number	Project Type	Action	Description LIne 1	Apply Date	Project Address	Owner Name	Applicant Name
14110146	PERMIT-G	APP 02/15	MAJOR/NEW SFD/.34 ACRES	11/26/2014	3915 ESTEL RD	NGUYEN, SANG & TUNG-CHAU	NGUYEN, SANG & TUNG-CHAU
15020038	PERMIT-G	APP 02/15	MAJOR/NEW SFD/19,023SF	2/4/2015	3508 PERRY ST	BRAUNFELD, JOEL R & DIANE TRSBRAUNF	BRAUNFELD, JOEL R & DIANE TRSBRAUNF
15020102	PERMIT-G	APP 02/15	MAJOR/TELECOM SITE/0.10AC	2/18/2015	3501 REBEL RUN	CITY OF FFX SCHOOL BRDCITY OF FAIRF	CITY OF FFX SCHOOL BRDCITY OF FAIRF

March

Project Number	Project Type	Action	Description LIne 1	Apply Date	Project Address	Owner Name	Applicant Name
			10100 Fairfax Blvd/ Demo Gas Station / 8,072sf				

April

Project Number	Project Type	Action	Description LIne 1	Apply Date	Project Address	Owner Name	Applicant Name
15010113	PERMIT-G	APP 04/15	MAJOR/ADDITION/.46ACRES	01/28/2015	3503 BURROWS AVE	FLOHR, DAVID &DIVINCENZO, MARGARET	FLOHR, DAVID &DIVINCENZO, MARGARET
15020111	PERMIT-G	APP 04/15	MAJOR/ADDITION/0.221ACRES	02/23/2015	9917 COLONY RD	ALSIP, LANCE J &KATHLEEN M	ALSIP, LANCE J &KATHLEEN M
15040083	PERMIT-G	APP 04/15	MAJOR/NEW RETAIL CENTER/30492SF	04/20/2015	9536 LEE HWY	FAIRFAX PLAZA LLC	FAIRFAX PLAZA LLC
15020052	PERMIT-G	APP 04/15	MAJOR/NEW SFD/13,800SF	02/09/2015	4123 VIRGINIA ST	GODWIN, DAVID PAUL &DEBRA WOODWORTH	GODWIN, DAVID PAUL &DEBRA WOODWORTH

Appendix B-5a

MCM #5 – Letter to BMP Owner

Appendix B-5a

MCM #5 – BMP Inspection Checklist

BMP ID:	Date: ___/____/___	Assessed by:

Site Name: _____

Address: _____

SECTION 1 - Background Information (GIS)

BMP Type :

- ☐ Dry Detention Pond
- ☐ Extended Detention Pond
- ☐ Wet Pond
- ☐ Filter (specify: _____)
- ☐ Infiltration (specify: _____)
- ☐ Check if structure is underground
- ☐ Dry Swale
- ☐ Wet Swale
- ☐ Grass Channel
- ☐ Dry Well
- ☐ Permeable Pavement
- ☐ Bioretention
- ☐ Wetland
- ☐ Level Spreader
- ☐ WQ Inlet
- ☐ Proprietary Device
- ☐ Other

Year Constructed:

Ownership

☐ Public ☐ Private ☐ Unknown

SECTION 2 - Field Visit

Rain in last 48 hrs? ☐ Yes ☐ No

Evidence of high water table (e.g., excessive soil saturation)? ☐ Yes ☐ No

Outlet Characteristics

Primary Outlet Structure:
☐ N/A – infiltration w/ no outlet ☐ Pipe ☐ Riser ☐ Weir ☐ Large Storm Overflow ☐ Open channel
☐ Large Storm By-pass ☐ Other: _____

Outlet Features:
☐ N/A ☐ Trash Rack ☐ Pond Drain ☐ Inverted outlet pipe ☐ Hooded outlet ☐ Anti-vortex device
☐ Perforated pipe ☐ Gravel Diaphragm ☐ Micropool outlet ☐ Multiple outlet levels
Outlet includes restrictor? ☐ Yes ☐ No

Outlet Structure Conditions:
Erosion at Outlet: ☐None ☐Slight ☐Moderate ☐Severe
Outlet Clogging: ☐None ☐Slight ☐Moderate ☐Severe
Structural Problems: ☐None ☐Slight ☐Moderate ☐Severe

Conditions At Outfall:
☐ Stream ☐ Closed storm sewer ☐ Surface channel ☐ Road ditch ☐ Other: _____
☐ Unknown

Active Erosion: ☐None ☐Slight ☐Moderate ☐Severe
Trash: ☐None ☐Slight ☐Moderate ☐Severe
Sedimentation: ☐None ☐Slight ☐Moderate ☐Severe
Odor: ☐None ☐Slight ☐Moderate ☐Severe
Algae: ☐None ☐Slight ☐Moderate ☐Severe
Other WQ Problems: ☐None ☐Slight ☐Moderate ☐Severe

Emergency Spillway Type: ☐ Channel ☐ Riser Overflow ☐ Weir ☐ Other: _____

Soil or Filter Media

Type of Filter/Infiltration Media: (check all that apply)
☐ Soil mix _____(in) ☐ Sand _____(in) ☐ Gravel _____(in) ☐ Large Stone _____(in)
☐ Organic material _____(in) ☐ Other_____ ☐ N/A ☐ Unknown
Avg. depth of sediment build-up on surface? _____(in)

Soil Media Sample: *Note – Complete during site investigation, if applicable*
Dominant Soil Type ☐ Clay ☐ Loam ☐ Sand ☐ Sand/Loam
Is the soil homogenous? ☐ Yes ☐ No

Comments:

Vegetation

General Observations:
☐ Landscaped
☐ Aquatic Bench
☐ Invasive Species
☐ Plant Diversity

Type of ground cover (% of Surface Area in Plan View up to low Outlet):
Note – All percentages should sum up to 100 %.

_____Trees _____Grasses/Perennials _____ Ponded water _____ Other: _____
_____ Managed Turf _____ Bare Soil _____ Shrubs _____ N/A
_____ Gravel/stone _____ Mulch _____ Emergent wetland

Depth of mulch, if present: ☐ Hardwood _____(in) ☐ Pine Straw _____ (in) ☐ Other_____ (in)
Rate degree of shading of BMP Surface Area by trees: ☐ Well Shaded ☐ Some Shading ☐ No Shading ☐ N/A

Inlet Characteristics

Inlet #1: Diameter/Width: _____(in)

Type of Inlet: ☐ Open Channel ☐ Closed Pipe ☐ Sheet Flow ☐ Curb Cut ☐ Other: _____

Elevation difference between bottom of inlet and BMP surface: _____ (in)

Inlet Submersion:
☐ Complete
☐ Partial
☐ None

Inlet Conditions:
Inlet Erosion ☐None ☐Slight ☐Moderate ☐Severe
Inlet Clogging ☐None ☐Slight ☐Moderate ☐Severe
Structural Problems ☐None ☐Slight ☐Moderate ☐Severe

Comments:

Inlet #2: Diameter/Width: _____(in)

Type of Inlet: ☐ Open Channel ☐ Closed Pipe ☐ Sheet Flow ☐ Curb Cut ☐ Other: _____

Elevation difference between bottom of inlet and BMP surface: _____ (in)

Inlet Submersion:
☐ Complete
☐ Partial
☐ None

Inlet Conditions:
Inlet Erosion ☐None ☐Slight ☐Moderate ☐Severe
Inlet Clogging ☐None ☐Slight ☐Moderate ☐Severe
Structural Problems ☐None ☐Slight ☐Moderate ☐Severe

Comments:

Inlet #3: Diameter/Width: _____(in)

Type of Inlet: ☐ Open Channel ☐ Closed Pipe ☐ Sheet Flow ☐ Curb Cut ☐ Other: _____

Elevation difference between bottom of inlet and BMP surface: _____ (in)

Inlet Submersion:
☐ Complete
☐ Partial
☐ None

Inlet Conditions:
Inlet Erosion ☐None ☐Slight ☐Moderate ☐Severe
Inlet Clogging ☐None ☐Slight ☐Moderate ☐Severe
Structural Problems ☐None ☐Slight ☐Moderate ☐Severe

Comments:

Inlet #4: Diameter/Width: _____(in)

Type of Inlet: ☐ Open Channel ☐ Closed Pipe ☐ Sheet Flow ☐ Curb Cut ☐ Other: _____

Elevation difference between bottom of inlet and BMP surface: _____ (in)

Inlet Submersion:
☐ Complete
☐ Partial
☐ None

Inlet Conditions:
Inlet Erosion ☐None ☐Slight ☐Moderate ☐Severe
Inlet Clogging ☐None ☐Slight ☐Moderate ☐Severe
Structural Problems ☐None ☐Slight ☐Moderate ☐Severe

Comments:

Pretreatment

Type of Pretreatment *(check all that apply)*
☐ None
☐ Sediment Forebay (_____ ft²)
☐ Grass Channel
☐ Riprap Channel or Apron
☐ Grass Filter Strip
☐ Plunge Pool?
☐ Stone Diaphragm
☐ Other: _____

Pretreatment Function ☐ By design ☐ Incidental
Is pretreatment functioning? ☐ Yes ☐ No
Is sediment removal necessary? ☐ Yes ☐ No
Signs of pretreatment bypass? ☐ Yes ☐ No
Signs of flow of sediment from pretreatment to BMP? ☐ Yes ☐ No
Severity: ☐ Slight ☐ Moderate ☐ Severe

General Design

BMP Features (check all that apply)
☐ Maintenance Access
☐ Fence
☐ Multi-cell
☐ Micropool
☐ Impermeable Liner
☐ Underdrain
☐ Clean Out
☐ Observation Well
Is water present in observation well?
☐ Yes ☐ No Depth: _____ ft
☐ Pond Drain
☐ Other: _____

Conveyance Through BMP
☐ No Defined Channel
☐ Low Flow Channel
☐ Concrete ☐ Eroded ☐ Earthen ☐ Other _____

Is BMP designed with a Permanent Pool? ☐ Yes ☐ No

PERFORMANCE

GENERAL PROBLEMS: (check all that apply)

- ☐ Maintenance Needed
- ☐ Water Bypass of Inlet
- ☐ Water Bypass of Outlet
- ☐ Incorrect Flow Paths
- ☐ Short-circuiting of treatment mechanism
- ☐ No or ineffective treatment
- ☐ Ineffective pretreatment
- ☐ Others _____
- ☐ Erosion at Embankments
- ☐ Erosion within Facility
- ☐ Deposition within Facility
- ☐ Inappropriate Ponding of Water
- ☐ Clogged Pond Drain/Underdrain
- ☐ Clogged Media
- ☐ Inappropriate media material
- ☐ Inappropriate underlying soil (infiltration)
- ☐ Permanent Pools not stable
- ☐ Inadequate vegetation
- ☐ Dead or Diseased Vegetation
- ☐ Too many invasive plants
- ☐ Trees on Embankment
- ☐ Failing structural components
- ☐ Safety issue (Note:_____)

WATER QUALITY IN FACILITY: ☐ N/A

Algae	☐ None	☐ Slight	☐ Moderate	☐ Severe	
Odor	☐ None	☐ Slight	☐ Moderate	☐ Severe	
Turbidity	☐ None	☐ Slight	☐ Moderate	☐ Severe	
Color	☐ Normal	☐ Abnormal:			

EVIDENCE OF:

- ☐ Geese
- ☐ Animal Burrows
- ☐ Mosquitoes
- ☐ BMP Alteration

PROBLEM		1=NONE	2 - FEW	3 – SEVERAL	4-SEVERE
TRASH		No evidence of trash	A few pieces of trash throughout BMP	Trash accumulation near inlet/outlet	Lots of trash in BMP or BMP used for storage
BMP BANK EROSION		No noticeable erosion	Slight erosion < 5% of bank affected	Moderate erosion ~15% of bank affected	Banks severely eroded, >25% of bank affected
SEDIMENT DEPOSITION		No sediment deposition	Areas of minor sediment deposition	Areas of some deposition, may be severe near inlet/outlets	Lots of deposition resulting in pond bottom clogging
SURFACE SLOPE		0-1% BMP surface slope	1-3% BMP surface slope or steeper slopes with check dams,	3-5% BMP surface slope with no check dams,	>5% surface slope;
SIDE SLOPES		BMP side slopes 3:1 or flatter	BMP side slopes 2:1	Steep BMP side slopes	Risk of side slope failure
STRUCTURAL		No evidence of structural damage	Minor problems (e.g., bank slump, eroded channels)	Moderate structural problems –failure pending	Structural failures (e.g., bank failure, blowout)
VISIBILITY		High visibility, near high-traffic areas	Some visibility, near traffic areas	Limited visibility, near low traffic areas	No visibility, behind buildings or fences
ACCESSIBILITY		Maintained access area for vehicles	Access area designated, but not maintained	Access for vehicles not designated	Access for vehicles not possible
VEG COVER		No mowing in/around BMP	Mowing along BMP edges but areas of no mow in BMP bottom	Mowed turf vegetation	BMP bottom has large areas of bare soil
		Dense plant cover (>75%)	Plant cover, 50-75%	Some plant cover, 25-50%	Sparse vegetative cover (<25%),
VEG HEALTH	TREES	Healthy and established	Slightly stressed	Stressed	Dead
	GROUND COVER	Healthy and established	Slightly stressed	Stressed	Dead
	SHRUBS	Healthy and established	Slightly stressed	Stressed	Dead
	EMERGENT WETLAND	Healthy and established	Slightly stressed	Stressed	Dead

OVERALL PERFORMANCE SCORE (circle one number)

Excellent design and function, no general problems with performance			BMP is well designed, but is undersized or has a few performance problems			BMP is adequately designed, several problems with performance are noted		Poor BMP design, severe performance problems or failure	
10	9	8	7	6	5	4	3	2	1

FIELD NOTES

GOOD OR INTERESTING FEATURES:

PHOTO #'S:

POOR OR PROBLEMATIC FEATURES:

PHOTO #'S:

SECTION 3 – DESIGN PLAN VERIFICATION

PLAN AVAILABLE: ☐ As-built ☐ Other: ____

Do field observations match design plans/as-builts? Describe any differences.

Soil type in facility	☐ N/A	☐ Yes	☐ No	If no, describe:
Pretreatment type and size	☐ N/A	☐ Yes	☐ No	If no, describe:
Signage	☐ N/A	☐ Yes	☐ No	If no, describe:
Low-flow channel	☐ N/A	☐ Yes	☐ No	If no, describe:
Dimensions/volume	☐ N/A	☐ Yes	☐ No	If no, describe:
Inlet type, #, and sizing	☐ N/A	☐ Yes	☐ No	If no, describe:
Outlet type, #, and sizing	☐ N/A	☐ Yes	☐ No	If no, describe:
Vegetation composition	☐ N/A	☐ Yes	☐ No	If no, describe:
Other features	☐ N/A	☐ Yes	☐ No	If no, describe:

Appendix B-5b

MCM #5 – BMP Inspection Report

SWM/BMP
INSPECTION REPORT

FOR CITY USE ONLY

LOCATION OF SWM/BMP:	ACCEPTED ( ) MAINTENANCE ( ) QUESTIONS ( ) REPAIRS ( )
ADDRESS OF SWM/BMP :	DATE: __/__/__ REVIEWED BY: _____ TITLE: _____
OWNER OR MANAGEMENT CO.:	**PHONE # :**
ADDRESS:	
INSPECTION COMPANY :	**PHONE # :**
ADDRESS :	
INSPECTOR NAME (print) :	**PHONE # :**
INSPECTOR SIGNATURE :	**DATE # :**

TYPE OF BMP

Bio-detention ( )	Dry Pond ( )	Wet Pond ( )	Infiltration Trench ( )	Underground Detention ( )
Storm Ceptor ( )	Sand Filters ( )	Green Roof ( )	Filterra ( )	Vegetated Swale ( )

Other, describe :

Inspection Checklist

Structural Integrity:	Yes	No	N/A
Does the facility show any signs of settling, cracking, bulging, misalignment, or any other structural deterioration?			
Do embankment, emergency spillways, side slope, or inlet/outlet structure show signs of excessive erosion or slumping?			
Is the inlet and outlet pipe damaged or otherwise not functioning properly?			
Do impoundment and inlet areas show erosion, low spots, or lack of stabilization?			
Are trees or saplings present on the embankment?			
Are animal burrows present?			
Are contributing areas unstabilized with evidence of erosion?			
Do grass areas require mowing and /or are clippings building up?			
Working Conditions			
Are cartridge filters, sand filters, filterra boxes, and other filters clogged?			
Provide date of last filter replacement. (/ /)			
Is water quality orifice, weir, grate, trash rack completely clear of debris and completely open?			
Does the depth of sediment or other factors suggest a loss of storage volume?			
Is there standing water in inappropriate areas, such as on filters or cartridges after a dry period?			
Is there an accumulation of floating debris and/or trash?			
Other Inspection Items			
Is there evidence of encroachments or improper use of impoundment areas?			
Do the fence gate or other safety device need repair?			
Is there excessive algae growth or has one type of vegetation taken over the facility?			
Is there evidence of oil, grease, or other automotive fluids entering and clogging the facility?			
In rain gardens, is there evidence of soil erosion, does mulch cover the entire area, is specified number and types of plants still in place, or is there evidence of disease or plant stress from adequate or too much watering?			
Is there evidence of fish kill?			

Appendix B-5c

MCM #5 – BMP Maintenance and Monitoring Agreement

BMP AGREEMENT# (to be filled in by staff): _____

CITY OF FAIRFAX
STANDARD BEST MANAGEMENT PRACTICES (BMP) FACILITIES MAINTENANCE AND MONITORING AGREEMENT

THIS AGREEMENT, made and entered into this _____ day of _____, 20 _____, by and between _____, its successors and assigns, hereinafter called (the "Landowner"), and the City of Fairfax, Virginia, a Virginia municipal corporation (the "City");

WITNESSETH:

WHEREAS, the Landowner is the owner of record certain real property located within the City, and described as:

_____
Tax map, block, and lot number

as acquired by deed recorded in the land records of the County of Fairfax, Virginia in Deed Book _____ at Page _____, (the "Property").

WHEREAS, Landowner is proceeding to build on and develop the Property and;

WHEREAS, Erosion and Sediment Control Plan/ Plan of Development/Site Plan/Subdivision Plan (describe fully)_____, (the "Plan"), which is expressly made a part hereof by reference, as approved or to be approved by the City, provides for detention or on-site treatment of stormwater within the confines of the Property and;

WHEREAS, Erosion and Sediment Control Plan/Plan of Development/Site Plan/Subdivision Plan identifies the type of structural best management practices facility or facilities as:

1)_____
2)_____ 4)_____
3)_____ 5)_____

as defined by the Virginia Stormwater Management Handbook and;

WHEREAS, Erosion and Sediment Control Plan/Plan of Development/Site Plan/Subdivision Plan identifies the geographic location (HUC), hydrologic unit code of each facility as:

1)_____(HUC as established in 4 VAC 50-60-10) _____(USGS HUC)
2)_____(HUC as established in 4 VAC 50-60-10) _____(USGS HUC)
3)_____(HUC as established in 4 VAC 50-60-10) _____(USGS HUC)
4)_____(HUC as established in 4 VAC 50-60-10) _____(USGS HUC)
5)_____(HUC as established in 4 VAC 50-60-10) _____(USGS HUC)

WHEREAS, Erosion and Sediment Control Plan/Plan of Development/Site Plan/Subdivision Plan identifies the impaired surface water that the best management practices facility is discharging into as:

1)_____
2)_____
3)_____
4)_____
5)_____

WHEREAS, Erosion and Sediment Control Plan/Plan of Development/Site Plan/Subdivision Plan identifies the number of acres treated by each facility as:

1)	Total:_____	Pollutant Removal:	TN: _____
	Pervious:_____		TP: _____
	Impervious:_____		TSS: _____
2)	Total:_____		TN: _____
	Pervious:_____		TP: _____
	Impervious:_____		TSS: _____

3) Total:_____ TN: _____
Pervious:_____ TP: _____
Impervious:_____ TSS: _____

4) Total:_____ TN: _____
Pervious:_____ TP: _____
Impervious:_____ TSS: _____

5) Total:_____ TN: _____
Pervious:_____ TP: _____
Impervious:_____ TSS: _____
and;

WHEREAS, Landowner acknowledges that the City Zoning Ordinance requires that on-site Best Management Practices, facilities, (the "Facilities"), be properly constructed and maintained, inspected on the property and;

WHEREAS, the City requires that the Facilities as shown on the Plan be constructed and adequately maintained by the Landowner.

NOW, THEREFORE, in consideration of the foregoing premises, the mutual covenants contained herein, and the following terms and conditions and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree as follows:

1. The Facilities shall be constructed by the Landowner, in accordance with the plans and specifications as identified in the Plan.
2. Landowner shall maintain the Facilities in good working condition, in a manner to be acceptable to the City, so that the Facilities perform as designed.
3. Landowner, hereby grant permission to the City, its authorized agents and employees, to enter upon the Property and to inspect the Facilities whenever the City deems it to be necessary. The purpose of the inspection shall be to assure safe and proper functioning of the Facilities, berms, outlet structures, pond areas, etc. When deficiencies are noted, the City shall give the Landowner, copies of the inspection report with its findings and evaluations within 30 days.
4. Landowner will submit inspection reports and perform maintenance in accordance with the maintenance schedule for the Facilities including sediment removal as outlined on the approved plans and the following specific requirements:
    a. Maintenance of the aforementioned facility or facilities shall conform to the maintenance requirements contained in Chapter 9 of the 2013 Stormwater Management Handbook, published by the Virginia Department of Environmental Quality and the Virginia Stormwater BMP Clearinghouse Website, available at http://www.vwrrc.vt.edu/swc/
    b. Inspection of Facilities shall be performed every **12** months by a qualified professional licensed to perform said work in the State of Virginia; an inspection report shall be submitted to the City Stormwater Program Specialist.
5. In the event the City, pursuant to this Agreement, enters upon the Property and takes whatever steps it deems necessary to maintain said Facilities and in performance of said work for labor, use of equipment, supplies, materials and the like on account of the Landowner's failure to perform such work, the Landowner shall reimburse the City, upon demand, within 30 days of receipt thereof for all costs incurred by the City hereunder. It is expressly understood and agreed that the City is under no obligation to maintain or repair said Facilities, and in no event shall this Agreement be construed to impose any such obligation on the City. If not paid within such 30-day period, the City shall have a lien against the Property to the extent permitted by law, in the amount of such costs, plus interest at the highest rate permitted by law.
6. Landowner shall indemnify and hold harmless the City, its officers, agents and employees for any and all damages, accidents, casualties, occurrences or claims which might arise or be asserted against the City for the construction, presence, existence of or maintenance of the Facilities by the Landowner. In the event a claim is asserted against the City, the City

shall promptly notify the Landowner, and the Landowner shall defend, at its own expense, any suit based on such claim. If any judgment or claim against the City shall be allowed, the Landowner shall pay all of the City's costs and expenses in connection therewith, including attorneys' fees.

7. Landowner hereby grants permission to the City, its authorized agents and employees, and the Northern Virginia Planning District Commission, its authorized agents, employees and consultants, to enter upon the property, and to install, operate and maintain equipment to monitor the flow rate and pollutant content of the input flow, the effluent, and at intermediate points in the BMP.
8. This Agreement shall be recorded among the land records of the County of Fairfax, Virginia, and shall constitute a covenant running with the land/or equitable servitude, and shall be binding on the Landowner, its administrators, executors, assigns, heirs and other successors in interest.

WITNESS the following signatures and seals:

_____
(Landowner) (Seal)

By: _____
Name (type or print)

Attest:_____
Secretary

WITNESS THE FOLLOWING SIGNATURE AND SEAL:

STATE OF _____County/City/Town of_____to-wit:

I, the undersigned, A Notary Public in and for the State and County, City or Town aforesaid, do hereby certify that this day personally appeared before me in the State and County, City or Town aforesaid:

_____, _____,
(Name) (Title)

whose name(s) is(are) signed to the foregoing and hereunto annexed agreement bearing the _____day of_____, 2_____, and acknowledged the same before me.

Given under my hand this _____day of _____,2_____.

Notary Registration Number#: _____

My Commission expires: _____day of _____,2_____.

_____
(Notary Public Signature)

BMP AGREEMENT# (to be filled in by staff): _____

CITY OF FAIRFAX

By: _____
Stormwater Resource Engineer

By: _____
City Attorney – Approved as to Form

By: _____
City Manager

Attest: _____
City Clerk

WITNESS THE FOLLOWING SIGNATURE AND SEAL:

COMMONWEALTH OF VIRGINA
CITY OF FAIRFAX to-wit:

The foregoing instrument was acknowledged before me this:

_____day of _____,2_____. by_____, as City Manager, on behalf of the City of Fairfax, Virginia.

My Commission expires: _____day of _____,2_____.

Notary Registration Number#: _____

_____
(Notary Public Signature)

Appendix B-7

Additional Year 2 Permit Requirements- Chesapeake Bay TMDL Action Plan

CHESAPEAKE BAY TMDL ACTION PLAN

PERMIT NUMBER VAR40064

Submitted to DEQ:

October 2015

CITY OF FAIRFAX, VIRGINIA - CHESAPEAKE BAY TOTAL MAXIMUM DAILY LOAD (TMDL) ACTION PLAN

INTRODUCTION

The City of Fairfax (City) developed this Chesapeake Bay TMDL Action Plan (Action Plan) pursuant to the Special Condition for the Chesapeake Bay TMDL (General Permit Section I.C) as required by the City's Municipal Separate Storm Sewer System (MS-4) Permit. To assist with the development of the Action Plan, the City utilized both the Department of Environmental Quality's (DEQ) Chesapeake Bay TMDL Special Condition Guidance Document (Guidance Memo No. 15-2005), and the General VPDES Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems, which became effective July 1, 2013. Furthermore, the City used the Virginia Geographic Information Network (VGIN), and Virginia Environmental Geographic Information Systems (VEGIS) aerial imagery, and coupled the imagery with City GIS data, to meet the technical requirements of the Action Plan.

The focus of the Action Plan is driven by the Chesapeake Bay TMDL, which was approved by the US Environmental Protection Agency (EPA) in December of 2010. Nitrogen, Phosphorous, and Sediment are the Pollutants of Concern (POC) driving the need for required pollutant reductions in the Chesapeake Bay watershed, which includes the entire City. Three permit cycles have been adopted to address the pollutant load reductions required by an MS4 in Virginia. A 5% POC load reduction is required by the end of the first permit cycle on June 30, 2018, followed by a 35%, and 60% reduction in the following 2 cycles respectively. For the purposes of this Action Plan, the primary focus will be on Permit Cycle 1 and the associated 5% reduction requirements.

This Action Plan details the methodology and results used to develop the required plan components. Detailed sections are provided within the report for the following tasks:

Review of Current MS4 Program and Existing Legal Authority - (Addresses Section I.C.2a(1) and I.C.2.a(2) of the MS4 Permit

Data Sources Utilized & Estimate of MS4 Regulated Acreages – (Addresses Section I.C.2.a(4) and Section I.C.2.a(5) of the MS4 Permit)

Estimated POC Loads and Required Reductions from Existing Sources – (Addresses Section 1.C.2.a(4) and Section I.C.2.a(5) of the MS4 Permit)

Estimated POC Loads and Required Reductions from New Sources – (Addresses Section 1.C.2.a(7)

Estimated POC Loads and Required Reductions from Grandfathered Sources – (Addresses Section I.C.2.a(8) of the MS4 Permit)

Estimated POC Load Reductions from Existing BMPs - (Addresses Section I.C.2.a(6) of the MS4 Permit

Means & Methods Strategy, Schedule, & Estimated Costs – (Addresses I.C.2.a(6) and I.C.2.a(11) of the MS4 Permit

List of Future Grandfathered Projects – (Addresses I.C.2.a(10) of the MS4 Permit)

Public Comment Process – (Addresses I.C.2.a(12) of the MS4 Permit)

REVIEW OF CURRENT MS4 PROGRAM AND EXISTING LEGAL AUTHORITY

The jurisdictional area of the City lies completely within a 2010 U.S. Census designated urbanized area. As such, the size and extent of the City's MS4 was evaluated based on the City limits. The City's MS4 regulated land includes all lands owned and operated by the City, as well as all conveyances and drainage areas served by the City's MS4. The City adopted an average land cover condition of 45% impervious, which exceeded the State average land cover condition of 16% impervious, established through the previous VSMP regulations. Because of the differential in impervious coverage, additional POC reductions beyond June 30, 2009 "Existing Sources" had to be derived for this Action Plan. "New Sources "projects that initiated construction between July 1, 2009 and June 30, 2014 required additional pollutant reductions (Satisfying General Permit Section I.C.2.a (7)), (Special Condition 7). "Grandfathered Sources" projects are those grandfathered in accordance with 9VAC25-870-48, which also required additional POC reductions (Satisfying General Permit Section I.C.2.a (8)), (Special Condition 8). Special Conditions 7 and 8 are addressed in later sections of this Action Plan.

The Virginia Department of Conservation and Recreation (DCR) issued a VSMP General Permit for small Municipal Separate Storm Sewer Systems (MS4s) to the City (Permit Registration Number: VAR040064) on July 1, 2013. In accordance with the General Permit, the City is responsible for developing, implementing and maintaining an MS4 Program that guides design, construction, maintenance, and management of all lands within its jurisdictional area.

The City has reviewed its MS4 Program and the 2014 MS4 Annual Report to evaluate its ability to comply with the Special Condition for the Chesapeake Bay TMDL (Section I.C) in the MS4 Permit. Based on this review, it is our opinion that the City of Fairfax does not require any new or modified legal authorities or policies in order to meet the requirements of this special condition. The following is a list of the City's relevant existing legal authorities and policies:

City of Fairfax's MS4 Program Plan
City of Fairfax's Illicit Discharge Detection and Elimination (IDDE) Policy
City of Fairfax's Storm Drainage Facilities (Stormwater Ordinance)
City of Fairfax's Public Facilities Design Manual (PFM)

The City will coordinate with VDOT, Fairfax County, and George Mason University (adjacent MS4s) to establish any Memorandums of Understanding (MOUs), or to further clarify MS4 service boundary line(s) and inter-jurisdictional responsibilities for POC loads and subsequent required POC load reductions in the future.

DATA SOURCES UTILIZED & ESTIMATE OF MS4 REGULATED ACREAGE

Because the City adopted an average impervious land cover condition of 45%, two different Land Cover datasets were derived. A 2009, and a 2014 Land Cover dataset was generated for this Action Plan. To determine the City of Fairfax's MS4 regulated land use acreage as of June 30, 2009 and July 1, 2014, four separate land coverage areas had to be generated. The four land covers needed to develop the Action Plan were impervious land, pervious land, forested land, and open waters. Guidance Memo No. 15-2005 states that VGIN, and subsequently VEGIS, has aerial imagery available, which was used to determine the

2009 and 2014 land cover conditions. The City's imperious land cover GIS layer was overlaid with the VEGIS aerial imagery, and was used as the basis to derive the land cover maps shown in Figure 1 (2009 Land Cover) and Figure 2 (2014 Land Cover). Because the City is opting to take the conservative jurisdictional approach to determine the size and extent of its MS4, the City of Fairfax Boundary shapefile was used as the bounding polygon and each of the four land coverage types were manually digitized with the "cut polygons" tool in Arc Map. The new polygons were subsequently characterized by their corresponding land cover classification in the shapefile's attribute table, and the "calculate geometry" tool was run to provide areas for each polygon. Although labor intensive, this methodology was chosen because it was more precise than a raster based land cover processing tool, and it allowed for a simple QA/QC area check at the end of the process to ensure accuracy.

The four land covers were classified by the following features:

PerviousLand – including areas of managed turf, high grass, landscaped and mulched areas, and stands of timber that do not meet the DEQ minimum requirements for forested lands;
ImperviousLand - including railroad corridors, compacted gravel areas, roads, parking lots, roofs, and sidewalks;
OpenWaters - including any substantial accumulation of water, ponds, above ground streams; and,
ForestedLand – based off an analysis of available aerial imagery. The analysis showed that the City contains significant tracts of land that appear to be consistent with the definition of "forested lands" as shown in the footnote on page 5 of DEQ's Guidance Document. As such, these lands (shown in Table 1, and Figure 1 and 2) were excluded from the regulated urban impervious and regulated urban pervious cover calculations per the DEQ Guidance Document. Lands within the City's MS4 service area that contained tree canopy based on the 2009/14 aerial imagery, but did not appear to meet the aforementioned criteria for forested lands were classified as pervious lands.

The City's 2009 and 2014 Land Cover Summary, corresponding total acreages, and percent change are shown in Table 1.

Table 1: 2009 and 2014 Land Cover Summary and 5 year percent change.

Land Cover	Acreage (2009)	Acreage (2014)	% Change
Impervious	1584.59	1600.23	0.99%
Pervious	2232.87	2278.20	2.00%
Forest	242.95	182.00	-25.09%
Open Water	6.57	6.57	0.00%
Total Acreage	4066.99	4066.99	

The results of the land cover analysis illustrate that the City is more pervious than impervious, with a small portion of the land cover having open water characteristics. The City has increased slightly in both impervious and pervious area from 2009 – 2014, while forested lands have decreased. The 2009 land cover results are shown in Figure 1, whereas the 2014 land cover results are shown in Figure 2.

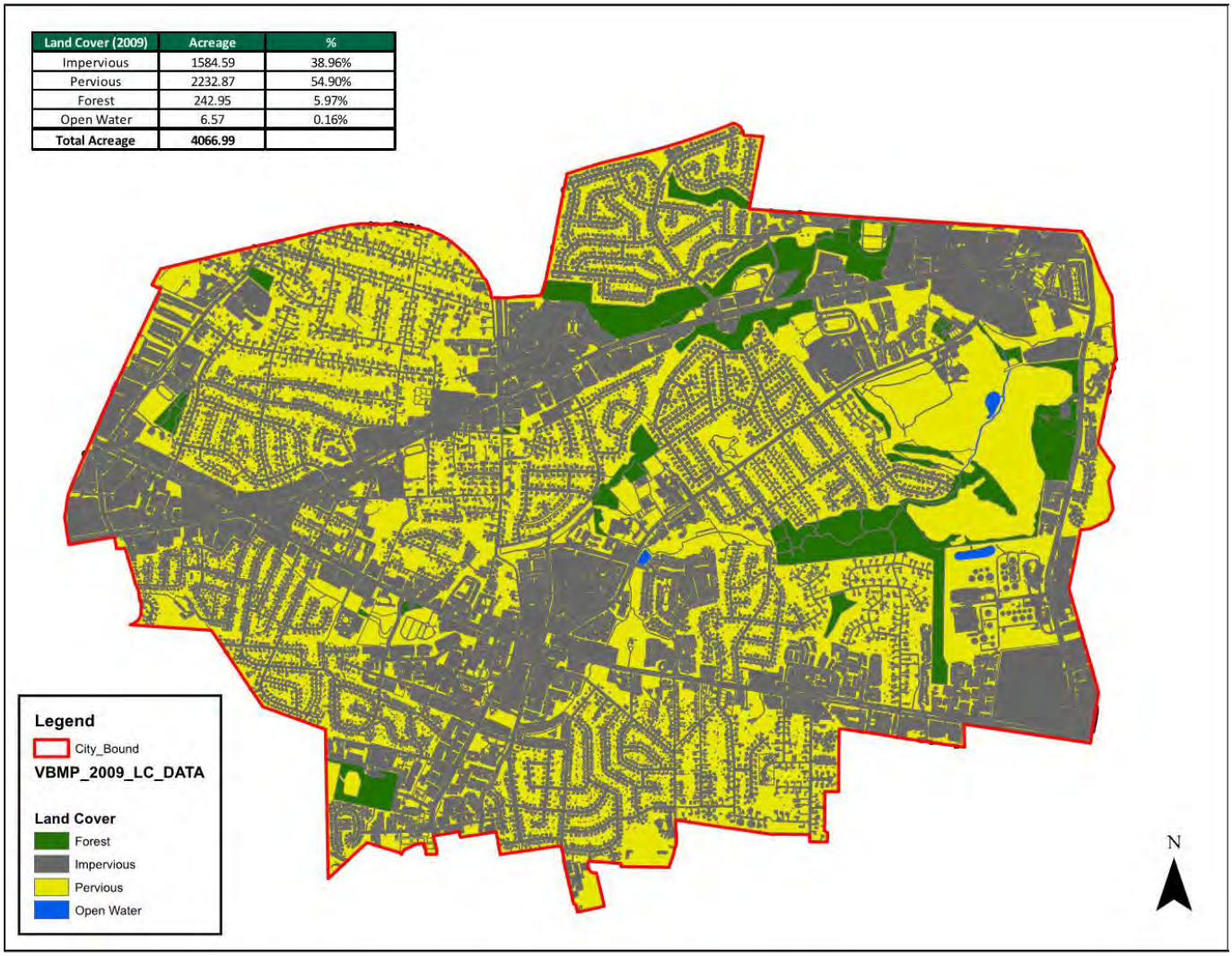


Figure 1. 2009 Land Cover Summary

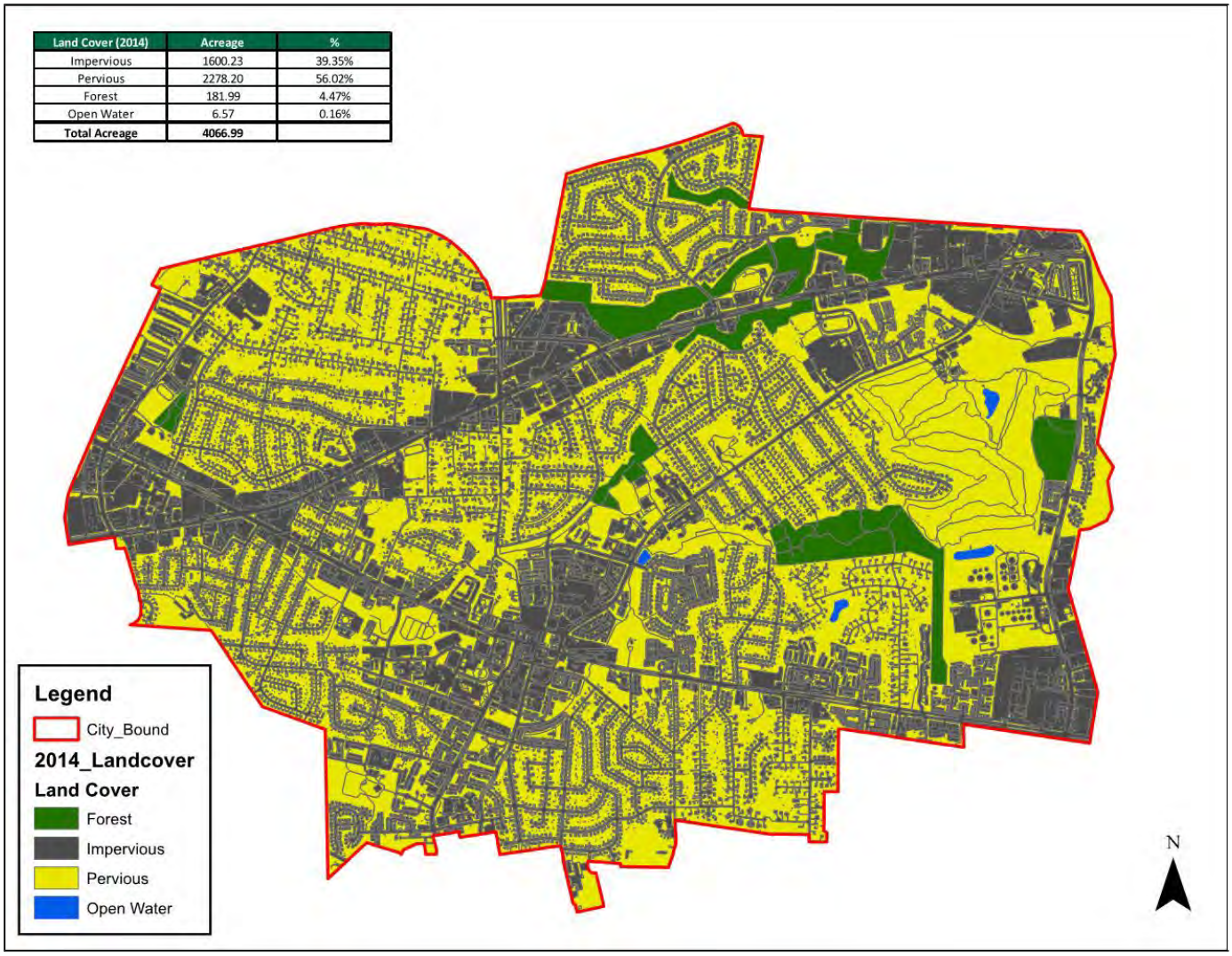


Figure 2. 2014 Land Cover Summary

EXCLUDED LANDS

Along with forested lands and open waters, all lands owned and/or operated by a separate MS4 were excluded from the City's regulated area. Furthermore lands regulated under a General VPDES permit for Stormwater Associated with Industrial Activity (VAR05) and lands regulated under an Individual Permit were also excluded. The lands regulated under separate permits are shown in Table 2, and their locations within the City are shown in Figure 3.

Table 2: Excluded Lands regulated under the General VPDES permit for Industrial Stormwater Activity

Facility Name	Address	Permit No.	Permit Type
Fairfax County - Jermantown Maintenance Facility	3609 Jermantown Rd	VAR051770	VPDES General Permit
National Asphalt Paving Corporation – Fairfax	3400 Old Pickett Rd	VAR051719	VPDES General Permit
Joint Basin Corporation - Fairfax Terminal Complex	9601 Colonial Ave	VA0001872	Individual SW Permit
Motiva Enterprises LLC - Fairfax	3800 Pickett Rd	VA0002283	Individual SW Permit

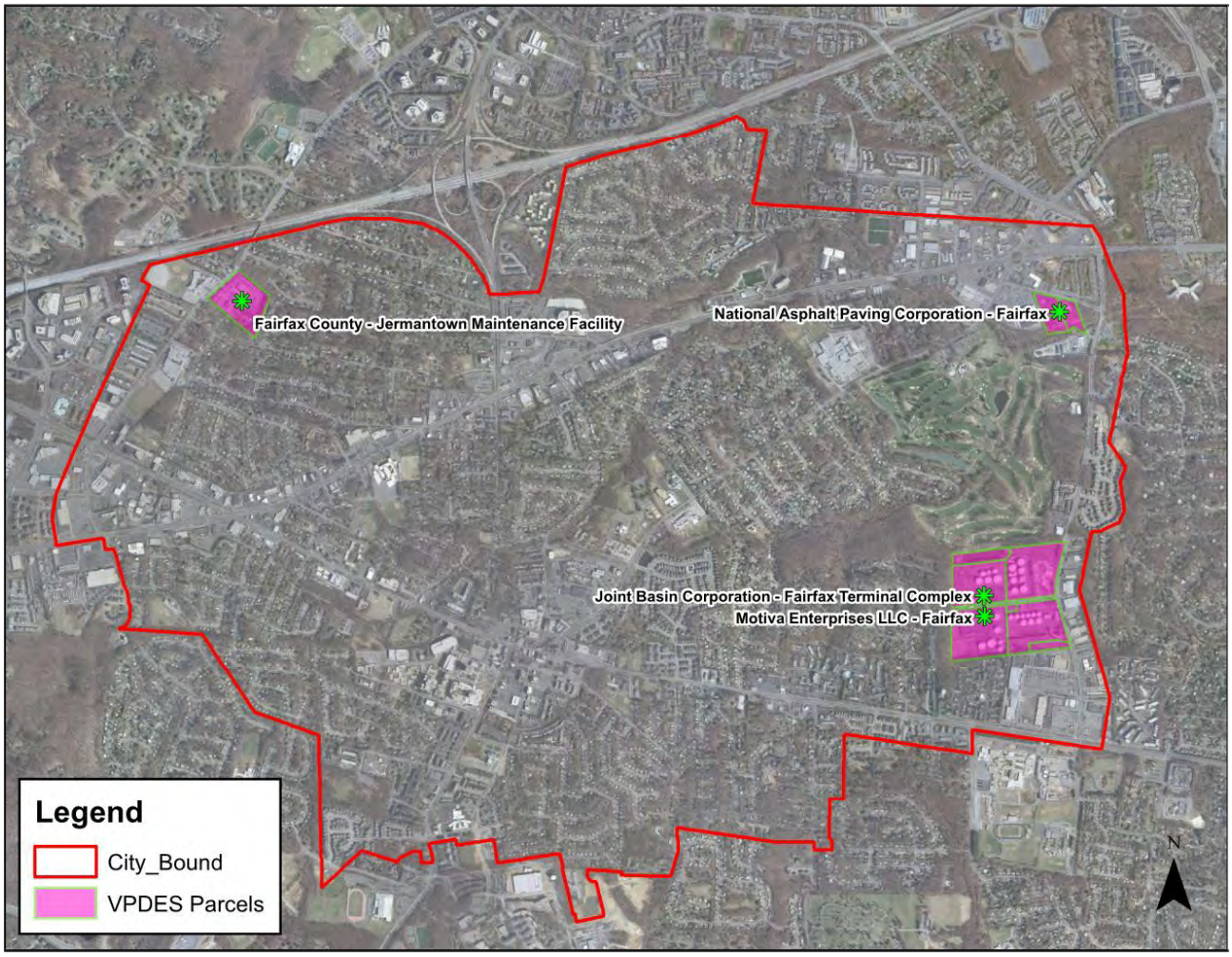


Figure 3. Lands Regulated Under a Separate VPDES Permit

Once the land coverage areas were delineated, the regulated acreage served by the City's MS4, as of June 30, 2009, was then determined. Using the conservative jurisdictional approach, pervious and impervious lands located within the City's boundary were classified as regulated, and lands covered under a General VPDES Permit shown in Figure 3 were excluded. The GIS polygon shapefile in Figure 1 was clipped to the polygon shapefile in Figure 3, and the land coverages associated with the VPDES permitted areas were extracted from the City's MS4 regulated area. This process determined the City's MS4 regulated area shown in Figure 4.

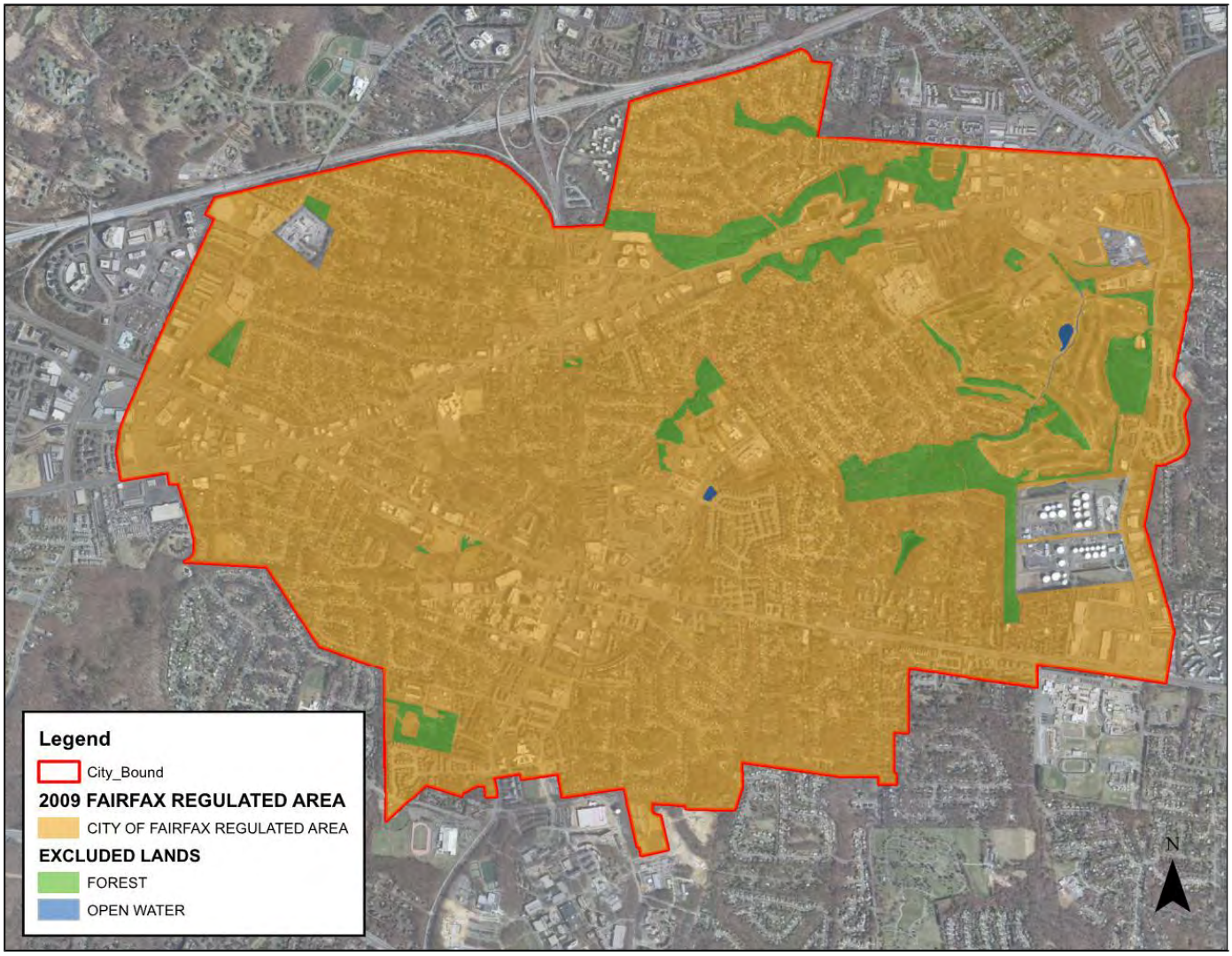


Figure 4. City of Fairfax MS4 Regulated Area.

ESTIMATED POC LOADS AND REQUIRED REDUCTIONS FROM EXISTING SOURCES

The GIS analysis listed in the previous section was imperative in determining the regulated pervious and impervious acres served by the City's MS4. The acreages associated with the regulated pervious and impervious areas were input into Table 2b from the MS4 General Permit titled "Calculation Sheet for Estimating Existing Source Loads for the Potomac River Basin". Table 2b was then used to derive an estimate of the annual POC loads discharged from the City's "Existing Sources" as of June 30, 2009. The estimated total POC Loadings for Nitrogen, Phosphorous, and Total Suspended Solids (TSS) were calculated by multiplying the acreages for each land cover (Subsource), by the 2009 Edge of Stream (EOS) loading rate for the corresponding pollutant. Forested lands and open waters were included in the regulated extents of the MS4, but were excluded from the Existing Source POC load calculations shown in Table 3 (Table 2b from the MS4 General Permit Table).

Table 3: Permit Table 2b – Calculation Sheet for Estimating Existing Source Loads from the Potomac River Basin

Table 2b: Calculation for Estimating Existing Source Loads for the Potomac River Basin				
(*Based on Chesapeake Bay Program Watershed Model Phase 5.3.2)				
Subsource	Pollutant	Total Existing Acres Served by MS4 (06/30/09)	2009 EOS Loading Rate (lbs./acre/yr.)	Estimated Total POC Load based on 2009 Progress Run (lbs./yr.)
Regulated Urban Impervious	Nitrogen	1548.74	16.86	26,111.79
Regulated Urban Pervious		2166.44	10.07	21,816.04
Regulated Urban Impervious	Phosphorus	1548.74	1.62	2,508.96
Regulated Urban Pervious		2166.44	0.41	888.24
Regulated Urban Impervious	Total Suspended Solids	1548.74	1171.32	1,814,072.51
Regulated Urban Pervious		2166.44	175.8	380,860.02

The calculations in Table 3 illustrate the total "Existing Source" POC Loads for Nitrogen, Phosphorous, and TSS at 47927.83 lbs./year, 3,397.20 lbs./year, and 2,194,932.53 lbs./year, respectively.

The next component of the Action Plan was to determine the total POC load reductions required in order to reduce the annual POC loads from "Existing Sources". As stated earlier in the Action Plan, the focus of this iteration of planning was to address the First Permit Cycle (July 1, 2013 to June 30, 2018) and the associated 5% POC reductions. The same regulated pervious and impervious acreages shown in Table 3 (Permit Table 2b), were input into Table 4 (Permit Table 3b from the MS4 General Permit titled "Calculation Sheet for Determining Total POC Reductions Required during the Permit Cycle for the Potomac River Basin"). The 5% "Existing Source" POC reductions were then calculated by multiplying the acreages for each specified land use, by the required reduction loading rate for its corresponding pollutant. The resultant 5% "Existing Source" POC reductions for the City are shown in Table 4.

Table 4: Permit Table 3b – Calculation Sheet for Determining Existing Source POC Reductions Required During the First Permit Cycle for the Potomac River Basin

Table 3b: Calculation Sheet for Determining Existing Sources POC Reductions Required During the Permit Cycle for the Potomac River Basin				
(*Based on Chesapeake Bay Program Watershed Model Phase 5.3.2)				
Subsource	Pollutant	Total Existing Acres Served by MS4 (06/30/09)	First Permit Cycle Required Reduction in Loading Rate (lbs./acre/yr.)	Existing Sources - 5% Total Reduction Required First Permit Cycle (lbs./yr.)
Regulated Urban Impervious	Nitrogen	1,548.74	0.08	123.90
Regulated Urban Pervious		2,166.44	0.03	64.99
Regulated Urban Impervious	Phosphorus	1,548.74	0.01	15.49
Regulated Urban Pervious		2,166.44	0.001	2.17
Regulated Urban Impervious	Total Suspended Solids	1,548.74	11.71	18,135.77
Regulated Urban Pervious		2,166.44	0.77	1,668.16

The calculations in Table 4 illustrate the 5% "Existing Source" POC load reductions for Nitrogen, Phosphorous, and TSS at 188.89 lbs./year, 17.66 lbs./year, and 19803.93 lbs., respectively. The "Existing Source" values represent the bulk of the City's required POC reductions and will be the baseline from which the "New Source" reductions and "Grandfathered Source" reductions will be added.

ESTIMATED POC LOADS AND REQUIRED REDUCTIONS FROM NEW SOURCES (SPECIAL CONDITION 7)

The City previously required post-development stormwater management to meet an average land cover condition of 45% imperviousness. Because the adopted land cover condition was greater than the State of Virginia's adopted land cover condition of 16% imperviousness, the City is required to offset additional reductions on all "New Sources" (Special Condition 7) of construction that were initiated between July 1, 2009 and June 30, 2014, and exceeded an average land cover condition of 16% for the design of post-development stormwater management facilities. In order to quantify the additional loadings and subsequent 5% reductions from the new sources, the Aggregate Accounting Method (Example II.2 of the Chesapeake Bay TMDL Special Condition Guidance Document) was used.

The Aggregate Accounting Method was developed to capture all changes in regulated urban impervious and regulated urban pervious loads between July 1, 2009 and June 30, 2014. All excluded lands were removed from the land cover shapefiles shown in Figure 1 (2009) and Figure 2 (2014) to generate the regulated pervious and impervious acreages for 2009 and 2014. The regulated impervious and pervious acreages from 2009, and 2014, were input into Permit Table 2b to determine the loadings for each respective year. To determine the 5 year overall aggregate load change, the 2009 POC loadings were

subtracted from the 2014 POC loads. The "New Sources" POC loading results developed with the Aggregate Method are shown in Table 5.

Table 5. Total POC Load from "New Sources" between June 30, 2009 and July 1, 2014

Special Condition 7. Aggregate Approach to address "New Sources" between June 30, 2009 and July 1, 2014					
Total Load Change from "New Sources" between 06/30/09 and 07/01/14					
Subsource	Pollutant	Estimate Total POC Load as of 07/01/14 (lbs./yr.)	Estimate Total POC Load as of 06/30/09 (lbs./yr.)	Load Change (lbs./yr.)	Total Load from "New Sources" (lbs./yr.)
Regulated Urban Impervious	Nitrogen	26375.34	26,111.79	263.55	722.09
Regulated Urban Pervious		22274.58	21,816.04	458.54	
Regulated Urban Impervious	Phosphorus	2534.29	2,508.96	25.32	43.99
Regulated Urban Pervious		906.91	888.24	18.67	
Regulated Urban Impervious	Total Suspended Solids	1832382.28	1,814,072.51	18,309.77	26,314.80
Regulated Urban Pervious		388865.05	380,860.02	8,005.03	

The "New Sources" loads in Table 5 were offset by the First Cycle 5% POC reduction requirements. The required reductions from "New Sources" are shown in Table 6.

Table 6. "New Sources" 5% POC Reduction Requirements

"New Source" Reductions Required during the First permit cycle			
Pollutant	Net Load Change from Table 5. (lbs./year)	Required 5% Reduction during First Permit Cycle	New Source Reductions Required during First Permit Cycle (lbs./yr.)
Nitrogen	722.09	0.05	36.10
Phosphorus	43.99	0.05	2.20
Total Suspended Solids	26,314.80	0.05	1315.74

The values in Table 6 illustrate that the City must offset 36.10 lbs./year of Nitrogen, 2.20 lbs./year Phosphorous, and 1315.75 lbs./year TSS, in addition to the "Existing Source" POC reductions shown in Table 4.

ESTIMATED POC LOADS AND REQUIRED REDUCTIONS FROM GRANDFATHERED SOURCES (SPECIAL CONDITION 8)

All projects deemed "Grandfathered" are in accordance with 9VAC25-870-48, disturb one acre or greater, have utilized an average land cover condition greater than 16% for the design of post-development stormwater management facilities, and result in an increased POC load. Projects that meet this criterion are required to offset additional pollutant loadings per Special Condition 8. The City does not have any projects considered "Grandfathered" and thus has no additional loadings that need to be offset to meet Special Condition 8.

OVERALL EXISTING, NEW, AND GRANDFATHERED SOURCE REQUIRED REDUCTIONS

The City's required first permit cycle overall 5% POC load reductions are shown in Table 7. The overall POC reductions were calculated by summing the "Existing", "New", and "Grandfathered" Sources required reductions.

Table 7. City of Fairfax's Overall 5% POC Load Reduction Requirements

Table 3b: Calculation Sheet for Determining Total POC Reductions Required During the Permit Cycle for the Potomac River Basin							
(*Based on Chesapeake Bay Program Watershed Model Phase 5.3.2)							
Subsource	Pollutant	Total Existing Acres Served by MS4 (06/30/09)	First Permit Cycle Required Reduction in Loading Rate (lbs./acre/yr.)	Existing Sources - 5% Total Reduction Required First Permit Cycle (lbs./yr.)	Special Condition 7. New Sources - 5% Total Reduction Required First Permit Cycle (lbs./yr.)	Special Condition 8. Grandfathered - 5% Total Reduction Required First Permit Cycle (lbs./yr.)	5 % Total Reduction Required First Permit Cycle (lbs./yr.)
Regulated Urban Impervious	Nitrogen	1,548.74	0.08	123.90	36.10	0	225.00
Regulated Urban Pervious Regulate		2,166.44	0.03	64.99			
d Urban Impervio us	Phosphorus	1,548.74	0.01	15.49	2.20	0	19.85
Regulated Urban Pervious		2,166.44	0.001	2.17			
Regulated Urban Impervious Regul	Total Suspended Solids	1,548.74	11.71	18,135.77	1315.74	0	21,119.67
ated Urban Pervi ous		2,166.44	0.77	1,668.16			

MEANS & METHODS, STRATEGY, SCHEDULE, & ESTIMATED COSTS

In order to meet the 5% POC load reduction requirements set forth in Table 7, the City is utilizing multiple crediting methods. The City will apply the credits provided by the Daniels Run (Daniels Run) Stream Restoration Project (Construction complete as of October 1, 2015) to address the majority of the load reduction requirements. As part of Daniels Run, the City has implemented 765 linear feet of urban stream restoration capturing a drainage area of 410 acres (all within City's MS4 regulated area). The POC crediting, shown in Table 8, for Daniels Run was determined using the TMDL Action Plan Guidance Document Interim Rates for Urban Stream Restoration.

Table 8. Daniels Run Stream Restoration POC Credits

Table V.J.1 - Urban Stream Restoration Interim Approved Removal Rates				
BMPs	How Credited	TN	TP	TSS
Stream Restoration	Mass reduction/length (lbs./linear ft.)	0.075	0.068	44.88
City of Fairfax - Daniels Run Stream Restoration Project				
Linear ft. of Stream Restoration	POC Removal provided (lbs./year)	TN	TP	TSS
765		57.38	52.02	34333.20

Daniels Run is located behind Daniels Run Elementary School, within the City of Fairfax. The Latitude and Longitudinal coordinates of the project are 38°51'5.74"N; 77°17'37.98"W respectively, and the overall construction cost for the project was $563,000.00.

The remainder of the 5% POC reduction was achieved through the City's street sweeping program. The City spends approximately $40,000 per year on street sweeping operations, and collects approximately 2048 cubic yards of material annually through their program. The City used the Mass Loading Approach to quantify street sweeping reductions, as outlined in Appendix V.G of the TMDL Action Plan Guidance Document. The volume of material collected was converted into a unit weight based on a conversion factor of 1yd^3 of Residential, Un-compacted Municipal Soil Waste equals 150 lbs. of waste (Source: EPA Guidance Document - Measuring Recycling: A guide for State and Local Governments – Appendix B: Standard Volume to Weight Conversion Factors). The Street Sweeping crediting, as well as the calculation methodology is shown in Table 9.

Table 9. Street Sweeping POC Crediting

Street Sweeping - Reference Appendix V.G of the TMDL Action Plan Guidance Document			
Mass Loading Calculation Methodology		CY of material collected annually	Conversion to pounds @ 150 lbs/CY[1]
		2048	307200
Conversion Factor to lbs. of material dry weight		0.7	
Pounds Dry weight of Material		215040.00	
POC Factors to determine reductions from street sweeping			
POC	TN (lbs/yr.)	TP (lbs/yr.)	TSS (lbs/yr.)
Reductions	0.0025	0.001	0.3
Street Sweeping Reductions Provided - Volumetric Based			
POC	Pollutant Removal Credits to be applied to be applied to reductions (lbs./year)		
TN (lbs/yr)	537.60		
TP (lbs/yr)	215.04		
TSS (lbs/yr)	64512.00		

[1] Residential Municipal Soild Waste conversion of 1yd^3 = 150 - 300 lbs, per EPA Guidance Document - Measuring Recycling: A guide for State and Local Governments – Appendix B: Standard Volume to Weight Conversion Factor

The Daniels Run project, coupled with the City's street sweeping program, provides the requisite POC reductions to ensure compliance with the First Permit Cycle requirements. The POC reduction crediting and application of the methodology to address the 5% required reductions is shown in Table 10.

Table 10. Means and Methods to address the total POC Reductions Required during the First Permit Cycle

Means and Methods Crediting to Address the First Permit Cycle (5%) Reduction Requirements												
(*Based on Chesapeake Bay Program Watershed Model Phase 5.3.2)												
Subsource	Pollutant	Total Existing Acres Served by MS4 (06/30/09)	First Permit Cycle Required Reduction in Loading Rate (lbs./acre/yr.)	Existing Sources - 5% Total Reduction Required First Permit Cycle (lbs./yr.)	Special Condition 7. New Sources - 5% Total Reduction Required First Permit Cycle (lbs./yr.)	Special Condition 8. Grandfathered - 5% Total Reduction Required First Permit Cycle (lbs./yr.)	5 % Total Reduction Required First Permit Cycle (lbs./yr.)	Means and Methods to Address 5% Reductions	Daniels Run Stream Restoration Project	Street Sweeping Crediting	Total Reductions provided by Means and Methods	Percentage of 5% Reduction
Regulated Urban Impervious	Nitrogen	1,548.74	0.08	123.90	36.10	0	225.00		Nitrogen Removed (lbs./year)	Nitrogen Removed (lbs./year)	Nitrogen Removed (lbs./year)	% N
Regulated Urban Pervious		2,166.44	0.03	64.99					57.38	537.60	594.98	264.44%
Regulated Urban Impervious	Phosphorus	1,548.74	0.01	15.49	2.20	0	19.85		Phosphorous Removed (lbs./year)	Phosphorous Removed (lbs./year)	Phosphorous Removed (lbs./year)	% P
Regulated Urban Pervious		2,166.44	0.001	2.17					52.02	215.04	267.06	1345.15%
Regulated Urban Impervious	Total Suspended Solids	1,548.74	11.71	18,135.77	1315.74	0	21,119.67		TSS Removed (lbs./year)	TSS Removed (lbs./year)	TSS Removed (lbs./year)	% TSS
Regulated Urban Pervious		2,166.44	0.77	1,668.16					34333.20	64512.00	98845.20	468.02%

LIST OF FUTURE GRANDFATHERED PROJECTS (SPECIAL CONDITION 10)

The City currently has one future grandfathered project. The project is bisected by the City boundary, with half of the project limits located in the City of Fairfax, and the other half of the project limits located in Fairfax County. The project is located at 9356 Lee Highway, Fairfax Virginia 22031, and is shown in Figure 5.

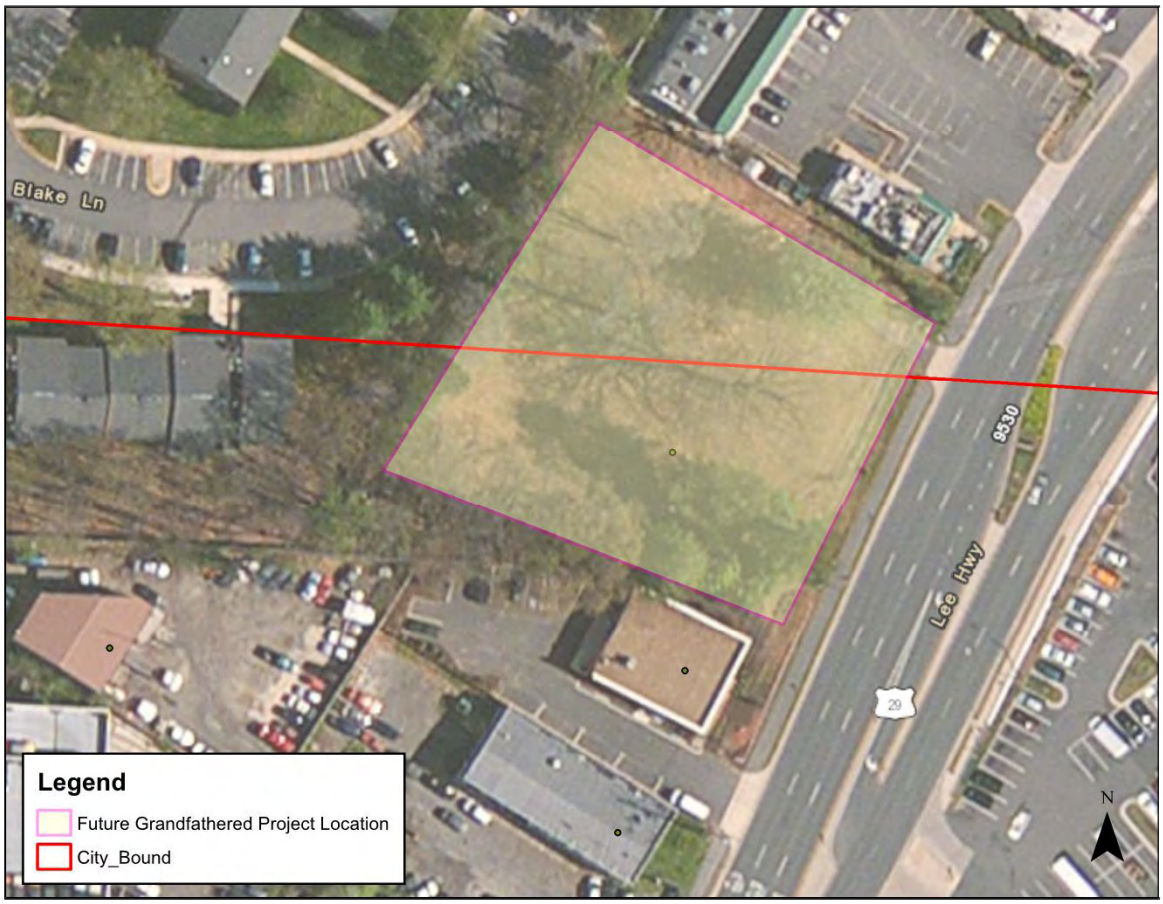


Figure 5. City of Fairfax's Future Grandfathered Project Location

PUBLIC COMMENT PROCESS

The City encourages the public's involvement and participation in the development and implementation of its MS4 Program. In keeping with this objective, the City has posted a copy of its Chesapeake Bay TMDL Action Plan on its website http://www.fairfaxva.gov/government/public-works/stormwater-and-floodplain-management/ms4-permit to solicit public comment on the plan. All comments received from the public will be taken into consideration when developing the final version of the Action Plan submitted to DEQ with its MS4 Annual Report in October of 2015.

CONCLUSION

The City developed this first permit term Action Plan as required in the 2013-2018 Phase II MS4 Permit Number VAR040064, and in accordance with the DEQ Guidance Document dated May 18, 2015. This TMDL Action Plan concludes that the first permit term pollutant reduction requirements will be met by implementing the proposed methodologies identified in the Means & Methods, Strategy, Schedule, and Estimated Costs section. The City of Fairfax reserves the right to modify this TMDL Action Plan as needed to maintain compliance with its Phase II MS4 Permit.

Appendix C

Water Quality Monitoring Reports

Fairfax City Water Quality Monitoring: **Report**
conducted by Potomac Environmental Research and Education Center
George Mason University
Note: Samples were collected on 9/4/2014

Parameter	Station A	Station B	Station C	Station D
Time	2:12 PM	1:54 PM	1:36 PM	2:25 PM
Temperature (oC)	22.70	22.88	23.57	24.93
Specific Conductance (umho/cm)	236	356	342	370
Dissolved Oxygen (mg/L)	7.80	7.78	7.92	7.93
Dissolved Oxygen (% saturation)	90.4	90.5	93.8	95.8
pH	7.15	7.14	7.15	7.14
Turbidity (NTU)	<1	<1	<1	<1
Nitrate + nitrite (mg/L as N)	0.49	0.63	0.84	0.63
Total phosphorus (mg/L as P)	0.038	0.039	0.038	0.025
Total suspended solids (mg/L)	3.4	4.3	6.6	5.7
Volatile suspended solids (mg/L)	1.3	1.7	2.0	2.0
Escherichia coli (#/100 mL)	1073	227	157	123
Latitude	38.853075	38.860637	38.861766	38.861645
Longitude	77.279314	77.292603	77.277595	77.269913

Station Locations:
Station A: Daniels Run at St Andrews Dr.
Station B: Middle Fork Accotink Cr off Spring Lake Terr
Station C: Accotink Cr just above Old Lee Hwy
Station D: Accotink Cr just below Pickett Rd

Methods

Parameter	Description	Reference
Temperature (oC)	Hydrolab DataSonde DS5	EPA 170.1
Specific Conductance (umho/cm)	Hydrolab DataSonde DS5	EPA 120.1
Dissolved Oxygen (mg/L)	Hydrolab DataSonde DS5	EPA 360.1
Dissolved Oxygen (% saturation)	Hydrolab DataSonde DS5	EPA 360.1
pH	Hydrolab DataSonde DS5	EPA 150.2
Turbidity (NTU)	Hydrolab DataSonde DS5	
Nitrate + nitrite (mg/L as N)	Cd reduction using Hach Nitraver 5/AQ2	EPA 353.3
Total phosphorus (mg/L as P)	Persulfate digestion/Ascorbic Acid/AQ2	EPA 365.2 as modified by Wetzel and Likens
Total suspended solids (mg/L)	Gravimetric with Whatman 984AH filters	EPA 160.1 dried to 80oC
Escherichia coli (#/100 mL)	Membrane Filter/Simultaneouse Detection	EPA 1604

Fairfax City Water Quality Monitoring: **Report**
conducted by Potomac Environmental Research and Education Center
George Mason University
Note: Samples were collected on 11/19/2014

Parameter	**Station A**	**Station B**	**Station C**	**Station D**
Time	10:30 AM	10:14 AM	9:51 AM	10:46 AM
Temperature (oC)	1.57	1.06	2.06	2.48
Specific Conductance (umho/cm)	151	218	228	208
Dissolved Oxygen (mg/L)	13.18	12.68	11.58	11.75
Dissolved Oxygen (% saturation)	94.1	89.2	84.0	86.5
pH	7.02	7.10	6.43	7.10
Turbidity (NTU)	4.2	8.1	12.4	12.6
Nitrate + nitrite (mg/L as N)	0.17	0.50	0.49	0.32
Total phosphorus (mg/L as P)	0.035	0.052	0.056	0.055
Total suspended solids (mg/L)	5.4	6.1	7.8	5.9
Volatile suspended solids (mg/L)	2.5	2.8	2.8	2.1
Escherichia coli (#/100 mL)	527	2133	2700	2800
Latitude	38.853075	38.860637	38.861766	38.861645
Longitude	77.279314	77.292603	77.277595	77.269913

Station Locations:
Station A: Daniels Run at St Andrews Dr.
Station B: Middle Fork Accotink Cr off Spring Lake Terr
Station C: Accotink Cr just above Old Lee Hwy
Station D: Accotink Cr just below Pickett Rd

Methods

Parameter	**Description**	**Reference**
Temperature (oC)	Hydrolab DataSonde DS5	EPA 170.1
Specific Conductance (umho/cm)	Hydrolab DataSonde DS5	EPA 120.1
Dissolved Oxygen (mg/L)	Hydrolab DataSonde DS5	EPA 360.1
Dissolved Oxygen (% saturation)	Hydrolab DataSonde DS5	EPA 360.1
pH	Hydrolab DataSonde DS5	EPA 150.2
Turbidity (NTU)	Hydrolab DataSonde DS5	
Nitrate + nitrite (mg/L as N)	Cd reduction using Hach Nitraver 5/AQ2	EPA 353.3
Total phosphorus (mg/L as P)	Persulfate digestion/Ascorbic Acid/AQ2	EPA 365.2 as modified by Wetzel and Likens
Total suspended solids (mg/L)	Gravimetric with Whatman 984AH filters	EPA 160.1 dried to 80oC
Escherichia coli (#/100 mL)	Membrane Filter/Simultaneouse Detection	EPA 1604

Fairfax City Water Quality Monitoring: **Report**
conducted by Potomac Environmental Research and Education Center
George Mason University
Note: Samples were collected on 2/19/2015

Parameter	**Station A**	**Station B**	**Station C**	**Station D**
Time	10:34 AM	10:13 AM	9:51 AM	10:54 AM
Temperature (oC)	0.02	0.08	0.18	0.24
Specific Conductance (umho/cm)	1953	4294	2794	4213
Dissolved Oxygen (mg/L)	15.39	13.95	13.98	14.51
Dissolved Oxygen (% saturation)	105.7	96.8	96.7	101.6
pH	7.58	7.48	7.27	7.27
Turbidity (NTU)	5.9	4.9	3.1	3.9
Nitrate + nitrite (mg/L as N)	1.23	2.04	2.42	1.91
Total phosphorus (mg/L as P)	0.034	0.095	0.021	0.021
Total suspended solids (mg/L)	6.4	5.9	4.3	4.4
Volatile suspended solids (mg/L)	2.3	2.0	1.6	1.5
Escherichia coli (#/100 mL)	<1	<1	34	45
Latitude	38.853075	38.860637	38.861766	38.861645
Longitude	77.279314	77.292603	77.277595	77.269913

Station Locations:
Station A: Daniels Run at St Andrews Dr.
Station B: Middle Fork Accotink Cr off Spring Lake Terr
Station C: Accotink Cr just above Old Lee Hwy
Station D: Accotink Cr just below Pickett Rd

Methods

Parameter	**Description**	**Reference**
Temperature (oC)	Hydrolab DataSonde DS5	EPA 170.1
Specific Conductance (umho/cm)	Hydrolab DataSonde DS5	EPA 120.1
Dissolved Oxygen (mg/L)	Hydrolab DataSonde DS5	EPA 360.1
Dissolved Oxygen (% saturation)	Hydrolab DataSonde DS5	EPA 360.1
pH	Hydrolab DataSonde DS5	EPA 150.2
Turbidity (NTU)	Hydrolab DataSonde DS5	
Nitrate + nitrite (mg/L as N)	Cd reduction using Hach Nitraver 5/AQ2	EPA 353.3
Total phosphorus (mg/L as P)	Persulfate digestion/Ascorbic Acid/AQ2	EPA 365.2 as modified by Wetzel and Likens
Total suspended solids (mg/L)	Gravimetric with Whatman 984AH filters	EPA 160.1 dried to 80oC
Escherichia coli (#/100 mL)	Membrane Filter/Simultaneouse Detection	EPA 1604

Fairfax City Water Quality Monitoring: **Report**
conducted by Potomac Environmental Research and Education Center
George Mason University
Note: Samples were collected on 4/30/2015

Parameter	**Station A**	**Station B**	**Station C**	**Station D**
Time	1020 am	1036 am	1051 am	1106 am
Temperature (oC)	13.72	13.88	13.85	14.60
Specific Conductance (umho/cm)	387	611	551	574
Dissolved Oxygen (mg/L)	12.00	10.35	10.01	10.20
Dissolved Oxygen (% saturation)	115.2	100.3	97.0	100.4
pH	7.71	7.47	7.29	7.61
Turbidity (NTU)	1.7	2.6	3.4	3.9
Nitrate + nitrite (mg/L as N)	0.60	1.48	1.61	1.24
Total phosphorus (mg/L as P)	0.010	0.013	0.021	0.019
Total suspended solids (mg/L)	3.5	2.1	6.2	5.8
Volatile suspended solids (mg/L)	2.4	1.2	2.1	2.1
Escherichia coli (#/100 mL)	70	627	570	253
Latitude	38.853075	38.860637	38.861766	38.861645
Longitude	77.279314	77.292603	77.277595	77.269913

Station Locations:
Station A: Daniels Run at St Andrews Dr.
Station B: Middle Fork Accotink Cr off Spring Lake Terr
Station C: Accotink Cr just above Old Lee Hwy
Station D: Accotink Cr just below Pickett Rd

Methods

Parameter	**Description**	**Reference**
Temperature (oC)	Hydrolab DataSonde DS5	EPA 170.1
Specific Conductance (umho/cm)	Hydrolab DataSonde DS5	EPA 120.1
Dissolved Oxygen (mg/L)	Hydrolab DataSonde DS5	EPA 360.1
Dissolved Oxygen (% saturation)	Hydrolab DataSonde DS5	EPA 360.1
pH	Hydrolab DataSonde DS5	EPA 150.2
Turbidity (NTU)	Hydrolab DataSonde DS5	
Nitrate + nitrite (mg/L as N)	Cd reduction using Hach Nitraver 5/AQ2	EPA 353.3
Total phosphorus (mg/L as P)	Persulfate digestion/Ascorbic Acid/AQ2	EPA 365.2 as modified by Wetzel and Likens
Total suspended solids (mg/L)	Gravimetric with Whatman 984AH filters	EPA 160.1 dried to 80oC
Escherichia coli (#/100 mL)	Membrane Filter/Simultaneouse Detection	EPA 1604

Fairfax City Water Quality Monitoring: **Report**
conducted by Potomac Environmental Research and Education Center
George Mason University
Note: Samples were collected on 5/30/2014

Parameter	**Station A**	**Station B**	**Station C**	**Station D**
Time	10:08 AM	9:55 AM	9:39 AM	10:22 AM
Temperature (oC)	16.35	15.93	16.04	16.68
Specific Conductance (umho/cm)	251	255	363	326
Dissolved Oxygen (mg/L)	8.83	8.48	7.94	9.77
Dissolved Oxygen (% saturation)	90.4	86.1	80.7	100.5
pH	7.38	7.42	7.19	7.22
Turbidity (NTU)	3.1	6.0	7.2	5.8
Nitrate + nitrite (mg/L as N)	0.62	1.11	1.18	1.12
Total phosphorus (mg/L as P)	0.034	0.046	0.047	0.036
Total suspended solids (mg/L)	3.6	4.5	4.9	4.9
Volatile suspended solids (mg/L)	2.5	1.9	1.9	1.9
Escherichia coli (#/100 mL)	139	1310	710	630
Latitude	38.853075	38.860637	38.861766	38.861645
Longitude	77.279314	77.292603	77.277595	77.269913

Station Locations:
Station A: Daniels Run at St Andrews Dr.
Station B: Middle Fork Accotink Cr off Spring Lake Terr
Station C: Accotink Cr just above Old Lee Hwy
Station D: Accotink Cr just below Pickett Rd

Methods

Parameter	**Description**	**Reference**
Temperature (oC)	Hydrolab DataSonde DS5	EPA 170.1
Specific Conductance (umho/cm)	Hydrolab DataSonde DS5	EPA 120.1
Dissolved Oxygen (mg/L)	Hydrolab DataSonde DS5	EPA 360.1
Dissolved Oxygen (% saturation)	Hydrolab DataSonde DS5	EPA 360.1
pH	Hydrolab DataSonde DS5	EPA 150.2
Turbidity (NTU)	Hydrolab DataSonde DS5	
Nitrate + nitrite (mg/L as N)	Cd reduction using Hach Nitraver 5	EPA 353.3
Total phosphorus (mg/L as P)	Persulfate digestion/Ascorbic Acid/AQ2	EPA 365.2 as modified by Wetzel and Likens
Total suspended solids (mg/L)	Gravimetric with Whatman 984AH filters	EPA 160.1 dried to 80oC
Escherichia coli (#/100 mL)	Membrane Filter/Simultaneouse Detection	EPA 1604

Appendix D

George Mason University's 2014 Annual Report

MS4 ANNUAL REPORT
PERMIT NUMBER VAR040106

September 2014

Subject: GEORGE MASON UNIVERSITY MS4 ANNUAL REPORT, PERMIT NUMBER VAR040106

Dated: September 30, 2014

I certify under penalty of law that all documents and all attachments related to the submission and updating of the GEORGE MASON UNIVERSITY MS4 ANNUAL REPORT were prepared under my direction or supervision in a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of a fine and imprisonment for knowing violations.

Sincerely,

Thomas G. Calhoun, P.E.
Vice President of Facilities

TABLE OF CONTENTS

I. ABBREVIATIONS and ACRONYMS

Abbreviation/ Acronym	Term
BMP	Best Management Practice
DEQ	Virginia Department of Environmental Quality
EHS	George Mason University's Environmental, Health, & Safety
ESC	Erosion and Sediment Control
FM	Facilities Maintenance
Mason LD	George Mason University Land Development
MS4	Municipal Separate Storm Sewer System
OoS	Office of Sustainability
SWM	Stormwater Management
VESCL&R	Virginia Erosion and Sediment Control Law and Regulations
VESCP	Virginia Erosion and Sediment Control Plan
VSMP	Virginia Stormwater Management Program

II. SUMMARY

As legislated by the Virginia Stormwater Management Program (VSMP) Permit Regulations (9VAC25-870-400 et. seq.), the Virginia Department of Conservation and Recreation (DCR) issued a VSMP General Permit (VAR040106) for small Municipal Separate Storm Sewer Systems (MS4) to George Mason University (Mason) on 09 July 2008. This permit was updated and extended effective 01 July 2013 by Virginia Department of Environmental Quality (DEQ). This permit holds Mason accountable for developing and implementing an MS4 Program. The program guides Mason's design, construction, maintenance, and management of its facilities and campuses.

Mason's MS4 Program applies to all activities undertaken by Mason, either by its internal workforce or contracted to external entities, where such activities are regulated by VSMP Permit Regulations. Compliance with the permitted MS4 Program (and all parts thereof) will be verified during any inspections of Mason's land disturbing activities, whether internal or by DEQ, Environmental Protection Agency (EPA), or other applicable environmental agencies. However, this MS4 permit only covers the Fairfax and Prince William campuses. The campuses are included under the MS4 permits for each of their respective local jurisdictions.

Mason's MS4 Report is submitted to the DEQ for review and approval on an annual basis. Mason will ensure compliance with the VSMP General Permit for MS4s issued 01 July 2013. This submittal constitutes Mason's commitment to execute all provisions contained herein on regulated land disturbing activities, land development projects, and operation and maintenance of installed stormwater management facilities. As such, this report will be made available to all appropriate Mason and DEQ personnel and is available for download as a PDF file at: http://facilities.gmu.edu/ProjMgmtConst/LandDevelopment/ms4.cfm. Specifics on compliance with the updated MS4 permit are included in Appendix A. Within this appendix, the general permit is broken down and a more detailed review of Mason's compliance within the permit for the reported year is provided.

Mason remains compliant with the Annual Report submitted September 2013 (Revised) in addition to this 2014 Annual Report. During the 30 June 2013 – 01 July 2014 permit cycle, Mason initiated a water quality monitoring program. Written procedures and preliminary testing were completed during this permitting period. The University will begin bi-annual water quality testing starting in fall 2014 for ten outfalls on Fairfax Campus and one outfall on Prince William Campus. Refer to Appendix B for more information about our testing procedures and manual.

Information regarding Mason's public outreach and education programs for stormwater management on campus can be found in Appendix C. A list of campaigns and activates conducted during this reporting period as well as a future list is attached.

The MS4 permit effective 01 July 2013 requires compliance on a structured timeline throughout the duration of the permit. The schedule of MS4 program plan updates can be found in Appendix D and will be further elaborated in future Annual Reports.

Mason Land Development (Mason LD) collaborates with Mason's Environmental, Health, and Safety Department (EHS) to adopt an Illicit Discharge Detection and Elimination Policy to report spills. This can be found in Appendix E. Mason LD conducts outfall reconnaissance every summer. To document the location of each outfall, Mason uses a grid system. The grid number is the first number in the outfall identifier with the second number being the numerical count of that outfall. For example, 6-3 is the third outfall located in grid 6.

Outfalls may have an 'i' at the end of its identifying number indicating that roofs drain are the source of the water discharging from that outfall. Maps depicting the outfall locations within the permitted areas are included as Appendix F.

All stormwater interconnections with outside stormwater systems are currently depicted on the MS4 maps in Appendix G for both Fairfax and Prince William Campuses. Copies of the letters sent to all potential interconnected MS4s are located within Appendix G.

Mason strives to provide a bright and innovative environment for our growing campus community. As a result our campuses continue to expand with new construction projects. A list of these projects can be found in Appendix H.

Mason issued one Notice of Corrective Action during this permit cycle. Documentation of this incident can be found in Appendix I.

There is an array of stormwater facilities on campus including structural BMPs like rain gardens, vegetative swales, pervious surfaces, and a green roof, as well as nonstructural BMPs including retention and detention ponds. A list of the University's permanent stormwater facilities can be found in Appendix J.

A Nutrient Management Plan for Mason has been prepared. More information on this plan can be found in Appendix K.

III. ANNNUAL REPORT ADMINISTRATION

3.1 *George Mason University Annual MS4 Report* submitted to DEQ includes the following background information as required by the General Permit:

3.1.1 The name and permit number of the program submitting the annual report.

This report is submitted under permit number VAR040106 by Keith Hamilton under the supervision of Thomas Calhoun, Vice President of Facilities.

3.1.2 The annual report permit year.

This Annual Report is for the year from 01 July 2013 to 30 July 2014.

3.1.3 Modifications to any operator's department's roles and responsibilities.

There are no changes in Mason LD's roles and responsibilities.

3.1.4 Number of new MS4 outfalls and associated acreage by HUC added during the permit year.

There are no new MS4 outfalls added during this reporting year. All outfalls can be found on Mason's MS4 database and internal MS4 maps. Refer to Map 2.1 and 2.2.

3.1.5 A signed certification.

Refer to Page 1 of this report.

3.1.6 The status of compliance with permit conditions, an assessment of the appropriateness of the identified BMPs and progress towards achieving the identified measureable goals for each of the minimum control measures.

George Mason University continues to implement Best Management Practices in order to meet all requirements of the general permit. A summary of BMPs implemented by George Mason University is included in Section V, Appendix J of this document. As a result of the annual program evaluation of the University's MS4, Mason LD has identified no program deficiencies or areas that need immediate improvements.

3.1.7 Results of information collected and analyzed, including monitoring data, if any, during the reporting cycle.

Mason LD has developed a quality monitoring program for surface waters within campus. Refer to Appendix A for more information on proposed BMPs associated with monitoring procedures.

3.1.8 A summary of the stormwater activities the operator plans to undertake during the next reporting cycle.

Refer to Appendix H for a list of the anticipated project expected to begin during the next reporting cycle. Each project includes a stormwater portion.

3.1.9 A change in any identified BMPs or measureable goal for any of the minimum control measures including steps to be taken to address any deficiencies.

No changes have been made during this permit year.

3.1.10 Notice that the operator is relying on another government entity to satisfy some of the permit obligations (if applicable).

Mason partners with Prince William County's government entity to satisfy some of the permit obligations. A SWM Pond owned and maintained by Prince William County satisfies some of the permit obligations as a part of a

cooperative development plan for Prince William Campus and the adjacent properties. The plans have been approved by Prince William County. Mason LD has identified several points where Mason discharges into other regulated MS4. A notification of potential interconnected stormwater system will be addressed to respective jurisdictions. Refer to Appendix G. This MS4 permit only covers the Fairfax and Prince William campuses. Since the permit does not cover the other campuses or properties owned by George Mason University, these areas are automatically included under the local jurisdictions' MS4s and no additional notifications are necessary (9VAC25-870-400-D.7.c.5).

3.1.11 The approval status of any programs pursuant to Section II C (if appropriate), or the progress towards achieving full approval of these programs.

There are no programs waiting for approval.

3.1.12 Information required pursuant to Section I B 9.

No TMDL or WLA are calculated for this permit duration. More information is intended to be provided as the revised program develops.

3.1.13 The number of illicit discharges identified and the narrative on how they were controlled or eliminated pursuant to Section II B 3 f.

EHS has responded to a total of 2 incidents this calendar year 2014 with no potential to impact the environment. No incident required EHS to notify Virginia DEQ of the incident, and no incident required EHS to supplement its response with contractor assistance. No incident required EHS to notify Virginia Department of Environmental Quality (Northern Regional Office) or the incident, and no incident required EHS to supplement its response with contractor assistance.

3.1.14 Regulated land-disturbing activities data tracked under Section II 4 c.

Refer to Appendix H for the table of tracked land-disturbing activities.

3.1.15 All known permanent SWM facility data tracked under Section II B 5 b (6) submitted in database format to be prescribed by the department. Upon filing of this list, subsequent reports shall only include those new SWM facilities that have been brought online during the reporting period.

Refer to Appendix J for a list of permanent stormwater management facilities.

3.1.16 A list of new or terminated signed agreements between the operator and any applicable third parties where the operator has entered into an agreement in order to implement minimum control measures or portions of minimum control measures.

There are no new or terminated agreements with third parties.

3.1.17 Copies of any written comments received during a public comment period regarding the MS4 Program Plan or any modifications.

No written comments were received by the public concerning the MS4.

IV. **APPENDICIES**

Appendix A:
Minimum Control Measures

Minimum Control Measure No. 1: Public Education and Outreach on Stormwater Impacts							
BMP CATEGORY	PROPOSED BMP	PROGRAM	MEASURABLE GOAL	RESPONSIBLE PERSON/ DEPARTMENT	CURRENT PROGRAM IN PLACE	ESTIMATED DATE OF IMPLEMENTATION	ANNUAL OBJECTIVES ACHIEVED/
1.a - 2008-2013 Program	1.a.1 - Implement Old Program	Continue to implement the public education and outreach program until the program is updated to meet the conditions of this state permit.	Comply with the 2008-2013 General Permit.	FM/ Mason LD		Complete	Information on the old program is available at the Facilities Management website http://facilities.gmu.edu/ProjMgmtConst/LandDevelopment/ms4.cfm.
1.b - Public Awareness Program	1.b.1 - Pollution Concerns	Increase target audience on how to reduce stormwater pollution, placing priority on reducing impacts to impaired waters and other local water concerns.	Increase target audience knowledge about the steps that can be taken to reduce stormwater pollution, placing priority on reducing impacts to impaired waters and other local water concerns.	Mason LD	YES	Complete	During freshman and transfer orientation, Mason LD handed out brochures, flyers, and dog bags from the Clean Water Partners (CWP) to raise awareness to passing faculty and staff, current and future students, and their guardians.
	1.b.2 - Hazards Associated	Increase target audience knowledge of hazards associated with illegal discharges and improper disposal of waste, including pertinent legal implications.	Increase target audience knowledge about the steps that can be taken to reduce hazards associated with illicit discharges and improper disposal of waste.	Mason LD	YES	Complete	During freshman and transfer orientation, Mason LD handed out brochures, flyers, and dog bags from the Clean Water Partners (CWP) to raise awareness to passing faculty and staff, current and future students, and their guardians.

	1.b.3 - Diverse Program	Implementing a diverse program with strategies that are targeted towards audiences most likely to have significant stormwater impacts.	Implementing a diverse program with strategies that are targeted towards audiences most likely to have significant stormwater impacts.	Mason LD/OoS	NO	2015	A diverse program with strategies that are targeted towards audiences is currently under development. Mason LD plans to have this implemented by the end of 2015.
1.c - Program Design	1.c.1 - Water Quality Issues	Identify high-priority water quality issues, and a rationale for the selection of these issues.	Indicate three high-priority water quality issues on campus and how we treat them.	Mason LD	YES	Complete	Refer to Appendix B for George Mason University's Water Quality Monitoring Manual. Mason LD test for many contaminants including phosphorus, nitrogen, and total suspended solids.

	1.c.2 - Population Size	Identify and estimate the population size of the target audience or audiences.	20% of all on campus students, faculty, and staff.	Mason LD	YES	Complete	The Office of Institutional Research and Reporting (IRR) does an annual count of the faculty (both full and part time), staff, and students for Fairfax and Prince William Campuses. The headcount for Fall 2013 for both full and part time students was 33,917 (http://irr.gmu.edu/10YrEnrollTrends.pdf). A report for all faculty and staff members is compiled ever October. In October 2013, Fairfax campus had 3,318 full-time faculty/staff; 986 part-time faculty/staff and Prince William campus had 211 full-time faculty/staff; 39 part-time faculty/staff.

	1.c.3 - Messages	Develop relevant message or messages and associated educational and outreach materials.	Use educational materials for public outreach	Mason LD	YES	Complete	Mason LD has developed and handed out brochures around campus through this year. These brochures are attached in Appendix C. Mason also uses the Clean Water Partners, Mason TV station, and stream clean-ups around campus.
	1.c.4 - Public Participation	Provide for public participation during public education and outreach program development.	Reach out to students and campus life on the importance of stormwater management.	Mason LD	YES	Complete	During freshman and transfer orientation, Mason LD handed out brochures, flyers, and dog bags from the Clean Water Partners (CWP) to raise awareness to passing faculty and staff, current and future students, and their guardians. Mason LD also host stream clean-ups around campus twice a year to promote public involvement and participation.

	1.c.5 - Target Audience	Annual conduct sufficient education and outreach activities designed to reach 20% of each high-priority issue target audience.	Reach out to students and campus life on our high-priority stormwater issues.	Mason LD	YES	Complete	Mason LD has selected to target all students, faculty, and staff on campus. We also have signage and electronic flyers in commonly toured areas for visitors to read when on campus. We have also partners with the Clean Water Partners (CWP) to raise awareness through a contract with Comcast.
	1.c.6 - Adjusting Target Audience	Provide for the adjustment of target audiences and messages including educational materials and delivery mechanisms.	Campus life changes every year, and campus is growing exponentially. Mason LD must plan to adjust target audience based on the amount of students, faculty, and staff.	Mason LD	YES	Complete	Every year Mason LD gets the number of students, faculty, and staff from admissions and HR. During freshman and transfer orientation, Mason LD will hand out brochures, flyers, and dog bags from the Clean Water Partners (CWP) to raise awareness to passing faculty and staff, current and future students, and their guardians. Mason LD has hosted and intends on hosting stream clean-ups around campus twice a year to promote public involvement and participation.

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1.d - Other Operators	1.d.1 - Public Outreach and Outreach Efforts	Coordination between other MS4 operators on public education and outreach efforts.	Coordination between other MS4 operators on public education and outreach efforts.	Mason LD	YES	Complete	Mason has an agreement with Northern Virginia Clean Water Partners.
1.e - Evaluation	1.e.1 - Stormwater Issues	High-priority stormwater issues.	Before continuing state permit coverage, the operator shall evaluate stormwater issues.	Mason LD	YES	Complete	The high-priority stormwater issues for the 2014 Annual Report include phosphorus, nitrogen, and total suspended solids.
	1.e.2 - Targeted Audience	Selected targeted audiences for each high-priority stormwater issue.	Before continuing state permit coverage, the operator shall evaluate stormwater issues.	Mason LD	YES	Complete	Mason LD has selected to target all students, faculty, and staff on campus. We also have signage and electronic flyers in commonly toured areas for visitors to read when on campus.
	1.e.3 - Messages	Message or messages being delivered.	Before continuing state permit coverage, the operator shall evaluate messages.	Mason LD	YES	Complete	Mason LD uses brochures, flyers, and dog bags from the Clean Water Partners (CWP) to raise awareness to faculty and staff, current and future students, and their guardians. Refer to Appendix C, Figure 1 for a copy of the brochure.

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	1.e.4 - Mechanisms	Mechanism or mechanisms of delivery employed in reaching the target audiences.	Before continuing state permit coverage, the operator shall evaluate targeted audience.	Mason LD	YES	Complete	Every year Mason LD gets the number of students, faculty, and staff from admissions and HR. During freshman and transfer orientation, Mason LD will hand out brochures, flyers, and dog bags from the Clean Water Partners (CWP) to raise awareness to passing faculty and staff, current and future students, and their guardians. Mason LD has hosted and intends on hosting stream clean-ups around campus twice a year to promote public involvement and participation.
1.f - MS4 Program Plan Updates	1.f.1 - Table 1	Describe how the conditions of this permit shall be updated in accordance with Table 1.		Mason LD	NO	2018	Refer to Appendix D for an updated Schedule of MS4 Program Plan Updates for the 2013-2018 Permit.

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1.g - Annual Reporting	1.g.1 - Education and Outreach Activities- Current Reporting Period	Maintain a list of education and outreach activities for each high-priority water quality issue.	A list of education and outreach activities conducted during the reporting period for each high-priority water quality issue, the estimated number of people reached, and an estimated percentage of the target audience or audiences that will be reached.	Mason LD	YES	Complete	The list of activities includes: bi-annual stream clean-ups, escorting class of 50+ students, and freshman and transfer orientation. Refer to Appendix C for a complete list of activities.
	1.g.2 - Education and Outreach Activities- Next Reporting Period	Maintain a list of future education and outreach activities for each high-priority water quality issue.	A list of education and outreach activities that will be conducted during the next reporting period for each high-priority water quality issue, the estimated number of people reached, and an estimated percentage of the target audience or audiences that will be reached.	Mason LD	YES	Complete	Refer to Appendix C for a list of current and future education and outreach activities.

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Minimum Control Measure No. 2: Public Involvement/ Participation							
BMP CATEGORY	PROPOSED BMP	PROGRAM	MEASURABLE GOAL	RESPONSIBLE PERSON/ DEPARTMENT	CURRENT PROGRAM IN PLACE	ESTIMATED DATE OF IMPLEMENTATION	ANNUAL OBJECTIVES ACHIEVED/ INTENDED
2.a - Public Involvement	2.a.1 - Compliance	The operator must comply with any applicable federal, state, and local public notice requirements	The maintain an updated MS4 Program Plan. Copies of each MS4 program plan shall be posted on its website at a minimum of once a year and within 30 days of submittal of the annual report to the department	Mason LD	YES	Complete	All previous MS4 Annual Reports are on our website at http://facilities.gmu.edu/ProjMgmtConst/LandDevelopment/ms4.cfm
2.b - Public Participation	2.b.1 - Participation	The operator shall participate in a minimum of four local activities annually.	Involve campus life in a minimum of four activities around campus yearly	Mason LD	YES	Complete	Every year, Mason LD participates in two stream clean ups (one in spring and one in fall), orientation for freshman and transfer students, and Northern Virginia Regional Commission (NVRC) meetings
2.c. - Procedures for Implementation	2.c.1 - Written Procedures	The MS4 Program Plan shall include written procedures for implementing this program	Address how GMU considered the comments received in the development of its MS4 Program Plan.	Mason LD	YES	Complete	Water Quality testing occurs bi-annually, with a goal of quarter-annually testing, in order to determine the total output of nutrients. Records will be kept and analyzed against the different factors that effect the data

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2.d - Annual Report	2.d.1 - Website	A web link to the MS4 Program Plan and annual report.	Keep the website up to date and reset the counter every permit cycle.	Mason LD	YES	Complete	The web counter for our Mason Land Development page can be found at http://facilities.gmu.edu/ProjMgmtConst/LandDevelopment/index.cfm All previous MS4 Annual Reports are on our website at http://facilities.gmu.edu/ProjMgmtConst/LandDevelopment/ms4.cfm
	2.d.2 - Proof of Compliance	Documentation of compliance with the public participation requirements of this section.	Document how many activities Mason LD organizes and the number of participants per event.	Mason LD	YES	Complete	Mason LD keeps records of how many volunteers participate in the stream clean-ups. Compliance and safety forms are filled out for every volunteer before being allowed to participate.

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Minimum Control Measure No. 3: Illicit Discharge Detection and Elimination							
BMP CATEGORY	**PROPOSED BMP**	**PROGRAM**	**MEASURABLE GOAL**	**RESPONSIBLE PERSON/ DEPARTMENT**	**CURRENT PROGRAM IN PLACE**	**ESTIMATED DATE OF IMPLEMENTATION**	**ANNUAL OBJECTIVES ACHIEVED/ INTENDED ACHIEVEMENT**
3.a - Storm Sewer System Map	3.a.1 - Location	Maintain the storm sewer system map annually.	The storm sewer system map should show at least the locations of all MS4 outfalls and the name and location of all waters receiving discharges from the MS4 outfalls and the associated HUC	Mason LD	YES	Complete	An outfall reconnaissance is conducted every year. Refer to Appendix E for both Fairfax and Prince William campuses.
	3.a.2 - Associated Information	Maintain information on every outfall located on the storm sewer system map annually.	For each outfall, the associated information table shall include a unique identifier, estimated MS4 acreage served, the name of the receiving surface water and indication, and the name of any applicable TMDL or TMDLs.	Mason LD	NO	2015	Data has been collected for all MS4 outfalls including unique identifier, receiving surface water, and any TMDLs. Mason LD is still in the process of compiling a usable database to store this information. We are expected to have this complete in 2015.

	3.a.3-5 - Completed Map	The operator shall have a completed and updated storm sewer system map and information table. The operator shall maintain a copy of this information, and continue to identify other points of discharge.	Maintain mapping and information table annually	Mason LD	NO	2015	Data has been collected for all MS4 outfalls including unique identifier, receiving surface water, and any TMDLs. Mason LD is still in the process of compiling a usable database to store this information. We are expected to have this complete in 2015.

3.b - Prohibited Discharge	3.b.1 - Prohibit nonstormwater Discharge	The operator shall effectively prohibit, through ordinance or other legal mechanism, nonstormwater discharges into the storm sewer system to the extent allowable under federal, state, or local law, regulation, or ordinance.	Adopt a policy to effectively prohibit nonstormwater discharges into the storm sewer system.	Mason LD/EHS	YES	2015 Revisions	George Mason University's Illicit Discharge Detection and Elimination (IDDE) Policy prohibits non-stormwater discharges into the University's MS4. The policy educates and instructs the public on what illicit discharges are and how to notify Mason LD and/or EHS of a spill. The policy also establishes enforcement procedures for violators. Refer to Appendix E for Mason's IDDE Policy implemented 2013. The University is currently revising this policy. During this reporting period there was nothing written in the policy about individual residential car washing. This is expected to be added and implemented in 2015.

3.c - IDDE Procedures	3.c.1 - Written dry weather field screening	Dry Weather Screenings are to detect and eliminate illicit discharges to the MS4.	Include a prioritized schedule of field screening activities, the minimum number of field screening activities the operator shall complete annually, a time frame of the last rain, and when to conduct an investigation.	Mason LD/EHS	YES	Complete	Mason LD conducts field screenings of all outfalls at least twice a year during the outfall reconnaissance. Documentation is collected on the conditions of all outfalls during this time. If any violations are found between screenings, Mason LD has an understanding with EHS as to reporting any illicit discharge found on campus. Refer to Appendix E for Mason's IDDE policy and how to repot any violation.
3.d - Inspections	3.d.1 - Promote, publicize, and facilitate public reporting of illicit discharges into or from MS4	The operator shall conduct inspections in response to complaints and follow-up inspections as needed to ensure that corrective measures have been implemented by the responsible party.	Maintain MS4 inspections the include all stormwater outfalls. Inspection reports are based on odor, visual observation, and other indicators to identify illicit discharges.	Mason LD/FM	YES	Complete	A detailed inspection of the MS4 system is performed at least twice a year to ensure proper functioning of facilities and monitoring illicit discharges. Inadequate structures are to be tracked and prioritized for corrective maintenance.

3.e - Development Procedures	3.e.1 - Nonstormwater Discharges	The MS4 Program plan shall include all procedures developed by the operator to detect, identify, and address nonstormwater discharges to the MS4 in accordance with the schedule given in Appendix D.	Follow procedures for reporting and tracing all illicit discharges. Appropriate staff will be instructed with these procedures.	Mason LD/EHS	YES	Complete	Standard procedures shall be followed for reporting and tracing all illicit discharges.

3.f - Annual Reporting	3.f.1-3 - Requirements	Each annual report shall include a list of any written notifications of physical interconnection, the total number of outfalls screened during the reporting period, the screening results, details of any follow-up actions necessitated by the screening results, and a summery of each investigation.	Maintain written notifications with outside stormwater systems and complete an inventory form for all MS4 outfalls.	Mason LD/EHS	YES	Complete	All stormwater interconnections with outside stormwater systems are currently depicted on the MS4 maps in Appendix E, Maps A.1 and A.2 for both Fairfax and Prince William Campuses. Letters are sent to all protection interconnected MS4s which can be found in Appendix G. Mason LD completes an inventory form as part of the yearly outfalls reconnaissance. Refer to Appendix F, Maps B.1 and B.2. There were no reportable 2 incidents this calendar year with no potential to impact the environment. EHS did not need to notify any authority for either of the incidents occurring in calendar year 2014.

Minimum Control Measure No. 4: Construction Site Stormwater Runoff Control							
BMP CATEGORY	**PROPOSED BMP**	**PROGRAM**	**MEASURABLE GOAL**	**RESPONSIBLE PERSON/ DEPARTMENT**	**CURRENT PROGRAM IN PLACE**	**ESTIMATED DATE OF IMPLEMENTATION**	**ANNUAL OBJECTIVES ACHIEVED/ INTENDED ACHIEVEMENT**
4.a - Oversight Requirements	4.a.1-4 - Land Disturbing Activities	The operator shall utilize its legal authority to address discharges entering the MS4.	The operator shall utilize its legal authority to address discharges entering the MS4.	Mason LD	YES	Complete	Mason LD is the VESCP authority under the Annual Standards and Specifications for Erosion and Sediment Control and Stormwater Management approved by DEQ. This document can be found on our website at :http://facilities.gmu.edu/ProjMgmtConst/LandDevelopment/erosion1.cfm. All construction plans are approved and permitted prior to land disturbance by George Mason University.

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4.b - Required Plan Approval	4.b.1 - Land Disturbing Activities	The operator shall require that land disturbance not begin until an erosion and sediment control plan or an agreement in lieu of a plan is approved by a VESCP authority.	The plan shall be either compliant with the minimum standards on the Erosion and Sediment Control Regulations, or compliant with department-approved annual standards and specifications.	Mason LD	YES	Complete	Mason LD is the VESCP authority under the Annual Standards and Specifications for Erosion and Sediment Control and Stormwater Management approved by DEQ. This document can be found on our website at :http://facilities.gmu.edu/ProjMgmtConst/LandDevelopment/erosion1.cfm. All construction plans are approved and permitted prior to land disturbance by George Mason University.
4 c - Compliance and Enforcement	4.c.1 - Inspections	The operator shall inspect land-disturbing activities for compliance with an approved erosion and sediment control plan or agreement in lieu of a plan in accordance with the minimum standards.	Maintain an inspection schedule that includes inspections upon installation, every four business days, within 48 hours of a 10-year storm, and at completion of the project.	Mason LD	YES	Complete	Mason LD inspects land disturbing activities upon installation, every four business days, within 48 hours of a 10-year storm, and at completion of the project.

4.d - Regulatory Coordination		The operator shall implement enforceable procedures to require small and large construction activities secure necessary state permit authorization from the department to discharge stormwater.	Implement procedures to require all construction activities on campus state permit authorization.	Mason LD	YES	Complete	Mason LD requires that all construction entities abide the Annual Standards and Specifications for Erosion and Sediment Control and Stormwater Management approved by DEQ. In addition, all construction entities must complete the DEQ checklist provided in George Mason University's Land Development How-To Manual. For general site plan review, Mason follows procedures for all stages of design given in the Construction and Professional Services Manual (CPSM), 2013 edition.
4.e - MS4 Program Requirements	4.e.1 - Requirements	The operator's MS4 Program must include a description of a legal authorities utilized to ensure compliance with the minimum control measures related to construction site stormwater runoff control.	Maintain compliance with the minimum control measures.	Mason LD/EHS	YES	Complete	Mason LD has an understanding with EHS as to reporting any illicit discharge found on campus. Refer to Appendix E for Mason's IDDE policy and how to repot any violation.

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	4.e.2 - Written Plan Review Procedures	The operator's MS4 Program must include a description of a legal authorities utilized to ensure compliance with the minimum control measures related to construction site stormwater runoff control.	Maintain compliance with the minimum control measures.	Mason LD/ EHS	YES	Complete	Plan Reviewers use DEQ checklist provided in George Mason University's Land Development How-To Manual.
	4.e.3 - Approved Standards and Specifications	The operator's MS4 Program must include a description of a legal authorities utilized to ensure compliance with the minimum control measures related to construction site stormwater runoff control.	Maintain compliance with the minimum control measures.	Mason LD	YES	Complete	Mason LD is the VESCP authority under the Annual Standards and Specifications for Erosion and Sediment Control and Stormwater Management approved by DEQ.
	4.e.4 - Written Inspection Procedures	The operator's MS4 Program must include a description of a legal authorities utilized to ensure compliance with the minimum control measures related to construction site stormwater runoff control.	Maintain compliance with the minimum control measures.	Mason LD	YES	Complete	Report sent to the contractor as well as the project manager and inspector with inspection procedures and schedules attached.

	4.e.5 - Written Procedures for Compliance and Enforcement	The operator's MS4 Program must include a description of a legal authorities utilized to ensure compliance with the minimum control measures related to construction site stormwater runoff control.	Maintain compliance with the minimum control measures.	Mason LD	YES	Complete	Mason LD requires that all construction entities abide the Annual Standards and Specifications for Erosion and Sediment Control and Stormwater Management approved by DEQ. In addition, all construction entities must complete the DEQ checklist provided in George Mason University's Land Development How-To Manual.
	4.e.6 - Roles and Responsibilities	The operator's MS4 Program must include a description of a legal authorities utilized to ensure compliance with the minimum control measures related to construction site stormwater runoff control.	Maintain compliance with the minimum control measures	Mason LD	YES	Complete	Mason LD implements all potions of the MS4 Program Plan.
4.f - Reporting Requirements	4.f.1 - Track regulated land-disturbing activities	Report the total number of regulated land-disturbing activities, total acreage disturbed, total number of inspections, and a summary of the actions taken during the reporting period.	Maintain an up-to-date file of all current and future land disturbing activities.	Mason LD	YES	Complete	Refer to Appendix H for a complete list of all current and future land disturbing activities. Refer to Appendix I for any notices of corrective action.

Minimum Control Measure No. 5: Post-Construction Stormwater Management in New Development and Redevelopment							
BMP CATEGORY	**PROPOSED BMP**	**PROGRAM**	**MEASURABLE GOAL**	**RESPONSIBLE PERSON/ DEPARTMENT**	**CURRENT PROGRAM IN PLACE**	**ESTIMATED DATE OF IMPLEMENTATION**	**ANNUAL OBJECTIVES ACHIEVED/ INTENDED ACHIEVEMENT**
5.a - Oversight Requirements	5.a.1-3 - New and Old Development	The operator shall address post-construction stormwater runoff that enters the MS4.	Any land disturbing activities for new or prior developed lands must be addressed.	Mason LD	YES	Complete	Mason LD inspects land disturbing activities upon installation, every four business days, within 48 hours of a 10-year storm, and at completion of the project.
5.b - Design Criteria	5.b.1-3 - Legal Authority	The operator shall utilize legal authority to address stormwater runoff.	Require a design and installation of all stormwater runoff controls compliant with the water quality criteria, design criteria, and department-approved annual standards and specifications for land disturbing activities.	Mason LD	YES	Complete	Mason LD is the VESCP authority under the Annual Standards and Specifications for Erosion and Sediment Control and Stormwater Management approved by DEQ. This document can be found on our website at http://facilities.gmu.edu/ProjMgmtConst/LandDevelopment/erosion1.cfm. All construction plans are approved and permitted prior to land disturbance by George Mason University.

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5.c - Inspection, Operation, and Maintenance	5.c.1-2 - Stormwater Management Facilities	Provide for adequate long-term operation and management of its stormwater management facilities.	Long term operations and management procedures for all stormwater management facilities. An inspection must be completed annually.	Mason LD	YES	Complete	Mason's MS4 is owned by the operator Inspections are completed twice annually on all stormwater management facilities. Refer to Appendix J for a list of stormwater management facilities on campus.
5.d - Program Plan Requirements	5.d.1 - MS4 Program Plan Updates	A list of the applicable legal authorities the ensure compliance with the minimum control measures related to post-construction stormwater management in new development and development on prior developed lands.	The operator's MS4 Program Plan shall be updated in accordance with the table in Appendix D.	Mason LD	YES	Complete	George Mason University is the legal authority that ensures compliance with the minimum control measures related to post-construction stormwater management in new development and development on prior developed lands.
	5.d.2 - MS4 Program Plan Updates	Written policies and procedures utilized to ensure that stormwater management facilities are designed and installed in accordance with legal authority.	The operator's MS4 Program Plan shall be updated in accordance with the table in Appendix D.	Mason LD	YES	Complete	Mason LD's written policies and procedures are published in the George Mason University Annual Standards and Specifications for Erosion and Sediment Control and Stormwater Management, 2012 Amended

	5.d.3 - MS4 Program Plan Updates	Written inspection policies and procedures utilized in conducting inspections.	The operator's MS4 Program Plan shall be updated in accordance with the table in Appendix D.	Mason LD	YES	Complete	Mason LD's written policies and procedures are published in the George Mason University Annual Standards and Specifications for Erosion and Sediment Control and Stormwater Management, 2012 Amended. Mason LD employees receive certification through VA DEQ. George Mason University is currently developing and implementing strategies that include a combination of structural and/or nonstructural best management practices (BMPs) appropriate for our campuses. A list of our stormwater facilities can be found in Appendix J.

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	5.d.4 - MS4 Program Plan Updates	Written procedures for inspection, compliance and enforcement to ensure maintenance is conducted on private stormwater facilities to ensure long-term operation in accordance with approved design.	The operator's MS4 Program Plan shall be updated in accordance with the table in Appendix D.	Mason LD	YES	Complete	All stormwater management facilities on both Fairfax and Prince William campuses are owned and operated by the University. Information regarding long-term maintenance can be found in the George Mason University Annual Standards and Specifications for Erosion and Sediment Control and Stormwater Management, 2012 Amended.

	5.d.5 - MS4 Program Plan Updates	Written procedures for inspection and maintenance of operator-owned stormwater management facilities.	The operator's MS4 Program Plan shall be updated in accordance with the table in Appendix D.	Mason LD	YES	Complete	All stormwater management facilities on both Fairfax and Prince William campuses are owned and operated by the University. The includes the few structural BMPs including vegetative swales, rain gardens, pervious pavers, and a green roof. Information regarding long-term maintenance can be found in the George Mason University Annual Standards and Specifications for Erosion and Sediment Control and Stormwater Management, 2012 Amended.
	5.d.6 - MS4 Program Plan Updates	The roles and responsibilities of each of the operator's departments, divisions, or subdivisions in implementing the minimum control measures related to post-construction stormwater management in new development and development on prior developed lands.	The operator's MS4 Program Plan shall be updated in accordance with the table in Appendix D.	Mason LD	YES	Complete	Mason LD is the sole division and holds all responsibility for implementing the minimum control measures related to post-construction stormwater management in new development and development on prior developed lands at the University.

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5.e - Tracking and Reporting	5.e.1-9 - Electronic Database or Spreadsheet	The operator shall maintain an updated electronic database of all known operator-owned and privately-owned stormwater management facilities that discharge into the MS4.	Maintain a database with the stormwater facility type, general description of location, the acres treated, date brought online, HUC number, whether the facility is operator-owned or privately-owned and if maintenance agrees, and the date of the operator's most recent inspection.	Mason LD	YES	2015	Mason LD has all of this information documented in hard copy. It is expected to be in a database by 2015. Refer to Appendix J for Stormwater Management Facilities.

Minimum Control Measure No. 6: Pollution Prevention/ Good Housekeeping for Municipal Operations							
BMP CATEGORY	**PROPOSED BMP**	**PROGRAM**	**MEASURABLE GOAL**	**RESPONSIBLE PERSON/ DEPARTMENT**	**CURRENT PROGRAM IN PLACE**	**ESTIMATED DATE OF IMPLEMENTATION**	**ANNUAL OBJECTIVES ACHIEVED/ INTENDED ACHIEVEMENT**
6.a - Operations and Maintenance Activities	6.a.1-8 - Written Procedures	The operator shall develop and implement written procedures designed to minimize or prevent pollutant discharge.	At a minimum, the written procedures shall be designed to: prevent illicit discharge, ensure the proper disposal of waste, prevent the discharge of municipal vehicle wash water into MS4, prevent the discharge of wastewater into MS4, require implementation of BMPs, minimize the pollutants in stormwater runoff from bulk storage areas, prevent pollution discharge into the MS4, and ensure that the application of materials is conducted in accordance with the manufacturer's recommendations.	Mason LD/ EHS/ FM	NO	2015	Although George Mason University does minimize pollution discharge, a written list of procedures is currently being written. This list will be completed by 2015.

6.b - Municipal Facility	6.b.1 - Municipal high-priority facilities	Within 12 months of the state permit coverage, the operator shall identify all municipal high-priority facilities.	The high-priority facilities shall include composting facilities, equipment storage and maintenance facilities, materials storage yards, pesticide storage facilities, public works yards, recycling facilities, salt storage facilities, solid waste handling and transfer facilities, and vehicle storage and maintenance yards.	Mason LD/ EHS/ PM	YES	Complete	George Mason University has high-priority facilities including equipment storage and maintenance facilities, materials storage yards, public works yards, recycling facilities, and vehicle storage and maintenance yards.
	6.b.2 - High potential of discharging pollutants	Within 12 months of the state permit coverage, the operator shall identify which of the municipal high-priority facilities have a high potential of discharging pollutants.	The high-priority facilities shall include composting facilities, equipment storage and maintenance facilities, materials storage yards, pesticide storage facilities, public works yards, recycling facilities, salt storage facilities, solid waste handling and transfer facilities, and vehicle storage and maintenance yards.	Mason LD	YES	Complete	George Mason University has policies and procedures in place (refer to Appendix E) if there is a potential of pollutant discharge at any of the municipal high-priority facilities on campus.
	6.b.3 - Stormwater Pollution Prevention Plans	The operator shall complete SWPPP development and implementation shall be completed within 48 months of coverage under this state permit.	Develop and Implement Stormwater Pollution Prevention Plan.	Mason LD	NO	2017	Mason LD has a current Stormwater Pollution Prevention Plan in place. We are in the process of revising and reinstating the SWPPP by 2017.

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6.c - Turf and Landscaping Management	6.c.1 (a)- Turf and Landscaping	The operator shall implement turf and landscape nutrient management plans that have been developed by a certified turf and landscape nutrient management planner.	The operator shall implement turf and landscape nutrient management plans. Implementation shall be within 12 months of state permit coverage, the operator shall identify all applicable lands where nutrients are applied to a contiguous area of more than one acre.	Mason LD/ FM	YES	Complete	George Mason University, in collaboration with Valley Crest Landscaping Companies, has a Nutrient Management Plan effective till May 2015. Refer to Appendix K, Maps C.1 and C.2 for the current land use map and landscape management zones.
	6.c.1 (b)- Turf and Landscaping	The operator shall implement turf and landscape nutrient management plans that have been developed by a certified turf and landscape nutrient management planner.	Implementation shall be within 60 months of state permit coverage, the operator shall implement turf and landscape nutrient management plans on all lands where nutrients are applied to a contiguous area of more than one acre.	Mason LD	NO	2018	Mason is currently redeveloping the landscaping plan and is expected to be complete in 2018.

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	6.c.2 - Annual Tracking	Operators shall annually track nutrient management Plans	Track the total acreage of lands where turf and landscape nutrient management plans are required and the total acreage of lands upon which turf and landscape nutrient management plans have been implemented.	Mason LD/ FM	YES	Complete	Mason LD is currently tracking the total acreage of lands where turf and landscape nutrient management plans are required and the total acreage of lands upon which turf and landscape nutrient management plans have been implemented. Refer to Appendix K for the current land use map and landscape management zones.
	6.c.3 - Deicing	The operator shall not apply any deicing agent containing urea or other forms of nitrogen or phosphorus to parking lots, roadways, and sidewalks, or other paved areas.	The operator shall not apply any deicing agent.	Mason LD/ FM	YES	Complete	George Mason University uses Kissner Salts and Chemicals: Landscaper's Choice Ice Melter for all sidewalks on campus. For all parking lots and roadways, Facilities Management purchases the identical deicing agent as Virginia Department of Transportation (VDOT).

6.d - Training	6.d.1 - Field Personnel	The operator shall conduct training for employees, determine and document the applicable employees or positions to receive each type of training, and develop an annual written training plan.	The operator shall provide biennial training to applicable field personnel in the recognition and reporting of illicit discharges.	Mason LD/ EHS	YES	Complete	EHS has personnel and procedures in place for recognition and reporting of illicit discharges.
	6.d.2 - Road, Street, and Parking Lot Maintenance	The operator shall conduct training for employees, determine and document the applicable employees or positions to receive each type of training, and develop an annual written training plan.	The operator shall provide biennial training to applicable employees in good housekeeping and pollution and prevention practices that are to be employed during road, street, and parking lot maintenance.	Mason LD	YES	Complete	Employees working on maintenance of roads, streets, and parking lots receive training by an outside contractor.
	6.d.3 - Maintenance and Public Works Facilities	The operator shall conduct training for employees, determine and document the applicable employees or positions to receive each type of training, and develop an annual written training plan.	The operator shall provide biennial training to applicable employees in good housekeeping and pollution and prevention practices that are to be employed in and around maintenance and public works facilities.	Mason LD/ PM	YES	Complete	Employees working in and around maintenance and public works facilities receive training by an outside contractor.

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	6.d.4 - Pesticides and Herbicides	The operator shall conduct training for employees, determine and document the applicable employees or positions to receive each type of training, and develop an annual written training plan.	The operator shall ensure that employees, and require that contractors, who apply pesticides and herbicides are properly trained or certified in accordance with the Virginia Pesticide Control Act.	Mason LD/ FM	YES	Complete	Employees applying pesticides and herbicides have completed their yearly certifications by Virginia. There are currently (2) employees who are certified and (1) that is currently receiving training.
	6.d.5 - Plan Reviewers, Inspectors, Program Administrators, and Construction Site Certifications	The operator shall conduct training for employees, determine and document the applicable employees or positions to receive each type of training, and develop an annual written training plan.	The operator shall ensure that employees and contractors serving as plan reviewers, inspectors, program administrators, and construction site operators obtain the appropriate certifications.	Mason LD	YES	Complete	George Mason University provides services in plan review, inspections, program administration, and construction site operations. Any employees working as one of the above has received the appropriate certifications.

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	6.d.6 - ESC Certifications	The operator shall conduct training for employees, determine and document the applicable employees or positions to receive each type of training, and develop an annual written training plan.	The operator shall ensure that applicable employees obtain that appropriate certifications as required under the Virginia Erosion and Sediment Control Law (VESCL) and its attendant regulations.	Mason LD	YES	Complete	All Erosion and Sediment Control inspectors and plan reviewers in Mason LD have successfully completed DCR's training and have acquired Certification for Combined administration. Mason LD has also verified that there is a registered RLD for construction activity that exceeded 1 acre of disturbance. This year, (6) employee was certified by DEQ, and (4) employees attended DEQ's training and certification class planning on taking the certification exam later in 2014/early 2015.
	6.d.7 - In and Around Recreational Facilities	The operator shall conduct training for employees, determine and document the applicable employees or positions to receive each type of training, and develop an annual written training plan.	The operator shall provide biennial training to applicable employees in good housekeeping and pollution and prevention practices that are to be employed in and around recreational facilities.	Mason LD/ EHS	YES	Complete	George Mason University contracts all work in and around recreational facilities to Brickman and Game Day, Inc. Both companies provide their own trained employees.

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	6.d.8 - Emergency Response	The operator shall conduct training for employees, determine and document the applicable employees or positions to receive each type of training, and develop an annual written training plan.	The appropriate emergency response employees shall have training in spill responses.	Mason LD/ EHS	YES	Complete	EHS has 10 staff members who have received 40 hour HAZWOPER training to act as emergency spill responders, and we maintain the training records for all these members.
	6.d.9 - Training Documentation	The operator shall conduct training for employees, determine and document the applicable employees or positions to receive each type of training, and develop an annual written training plan.	The operator shall keep documentation on each training event including the training date, the number of employees attending the training, and the objective of the training event for a period of three years after each training.	Mason LD/ EHS	YES	Complete	George Mason University keeps documentation on each training event including the training date, the number of employees attending the training, and the objective of the training event for a minimum period of three years after each training.
6.e - Control Measures and Procedures	6.e.1 - Stormwater Discharge Procedures	The operator shall require that municipal contractors use appropriate control measures and procedures for stormwater discharge to the MS4 system.	Oversight procedures shall be described in the MS4 Program Plan.	Mason LD	YES	Complete	Mason LD has (4) employees provisionally certified in Stormwater Management by DEQ this permit cycle. These employees inspect construction sites to ensure the control measures and procedures are being implemented correctly.

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6.f - MS4 Program Plan		At a minimum, the MS4 Program Plan shall contain: written protocols being used to satisfy the daily operations and maintenance requirements, a list of all municipal high-priority facilities, a list of lands where nutrients are applied to a contiguous area of more than one acre, and the annual written training plan for the next reporting cycle.	Maintain protocols being used to satisfy the daily operations and maintenance requirements, a list of all municipal high-priority facilities, a list of lands where nutrients are applied, and the annual written training plan for the next reporting cycle.	Mason LD	NO	2016	George Mason University is currently establishing written protocols for daily operations and maintenance requirements. This document is expected to be completed by 2016. Refer to the above section 6.c.1 for all high-priority facilities. George Mason University has a Nutrient Management Plan for both Fairfax Campus and Prince William Campus. Refer to Appendix K for Nutrient Management maps.
6.g - Annual Reporting Requirements		Summaries on the development and implementation of daily operational procedures, required SWPPPs, turf and landscape required, and the required training information.	Compile summaries of all procedures, SWPPPs, turf and landscaping, and training information.	Mason LD	NO	2018	Mason LD currently has all training information completed. Once the SWPPPs and turf and landscaping information is compiled in 2017, the summaries are expected to be completed by 2018.

Appendix B:
Water Quality Monitoring

Water Quality Monitoring

In accordance with the MS4 Permit 2013-2018, George Mason University (GMU) has created a Water Quality Monitoring Procedure that includes the newly created Water Quality Monitoring Manual that provides detailed instruction and information about proper testing and reporting procedures. In order to ensure the University is properly discharging and treating the waters across the campuses, GMU Facilities requires testing on a bi-annual basis with a goal of quad-annual testing. George Mason University has identified the following pollutants/characteristics as top priority for monitoring.

1. Temperature
2. pH
3. Turbidity
4. Dissolved Oxygen
5. Nitrogen
6. Nitrate
7. Phosphorus
8. Total Suspended Solids

During this permitting period, written procedures and preliminary testing were completed. The University shall begin bi-annual testing starting in Fall 2014 for ten outfalls on Fairfax Campus and one outfall on Prince William Campus Future tests will be divided into two categories: Primary and Secondary. Below are the example spreadsheets that results are recorded on when conducting field tests. The Water Quality Monitoring Manual is available by request. To request a copy, or if there are any questions/concerns, please contact:

George Mason University Facilities Administration, Attn. Liz Anderson

4400 University Drive, MSN #1E4, 703-993-4323

Example Primary Results Spreadsheet + Checklist

George Mason University Land Development Water Quality Primary Testing Results				
Date: / /20	Time: : AM/PM	Location:		
Weather Conditions:				
Results				
Test	**Category**	**Trial 1**	**Trial 2**	**Trial 3**
Temperature [°C]	-			
pH	EcoTestr pH 2 Waterproof Pocket Tester Method			
Turbidity [FAU]	-			
Dissolved Oxygen	High Range, 0 to 1000 µg/L O2 Ammonia, 0 to 0.5 mg/L, NH_3-N			
Nitrogen	Ammonia, Low Range, Test 'N Tube, 0 to 2.5 mg/L, NH_3-N, Salicylate Method			
	Reactive, Using AccuVac Ampuls			
Nitrate	Low Range, 0 to 0.5 mg/L NO_3^--N, Cadmium Reduction Method, Using Powder Pillows			
Phosphorus	Reactive, Using Powder Pillows			
Total Suspended Solids [mg/L]	-			

Primary	Temperature	-	
	pH	pH Meter Method	
	Turbidity	-	
	Dissolved Oxygen	High Range, 0 to 15 mg/L O2	
	Nitrogen	Ammonia, 0 to 0.5 mg/L NH_3-N	
		Ammonia, Low Range, Test 'N Tube, 0 to 2.5 mg/L NH_3-N, Salicylate Method	
	Nitrate	Low Range, 0 to 0.5 mg/L NO_3^--N, Cadmium, Reduction Method, Using Powder Pillows	
	Phosphorus	Reactive, Using AccuVac Ampuls	
	Total Suspended Solids	-	

Notes:

Example Secondary Results Spreadsheet + Checklist

George Mason University Land Development Water Quality Secondary Testing Results				
Date: / /20	Time: : AM/PM		Location:	
Weather Conditions:				
		Results		
Test	**Category**	**Trial 1**	**Trial 2**	**Trial 3**
pH	Test Strip Method			
	Colorimeter Method			
Dissolved Oxygen	Low Range, 0 to 1000 µg/L O2			
Nitrogen	Ammonia, High Range, Test 'N Tube, 0 to 50 mg/L NH_3-N, Salicylate Method			
Nitrate	Mid-Range, 0 to 5.0 mg/L NO_3^--N, Cadmium Reduction Method, Using Powder Pillows			
	Mid-Range, 0 to 5.0 mg/L NO_3^--N, Cadmium Reduction Method, Using AccuVac Ampuls			
	High Range, 0 to 30.0 mg/L NO_3^--N, Cadmium Reduction Method, Using Powder Pillows			
	High Range, 0 to 30.0 mg/L NO_3^--N, Cadmium Reduction Method, Using AccuVac Ampuls			
	High Range, Test 'N Tube, 0 to 30.0 mg/L, NO_3^--N, Chromotropic Acid Method			
Phosphorus	Reactive, 0.00 to 5.00 mg/L PO_4^{3-}, PhosVer 3 Method, Test 'N Tube Procedure			
	Reactive, 0 to 30.0 mg/L PO_4^{3-}, Amino Acid Method			
	Reactive, 0 to 2.5 mg/L PO_4^{3-}			
	Reactive, 0 to 45.0 mg/L PO_4^{5-}, Molybdovanadate Method, Using Reagent Solution			
	Reactive, 0 to 45.0 mg/L PO_4^{5-}, Molybdovanadate Method, Using AccuVac Ampuls			

Secondary	pH	Test Strip Method	
		Colorimeter Method	
	Dissolved Oxygen	Low Range, 0 to 1000 µg/L O2	
	Nitrogen	Ammonia, High Range, Test 'N Tube, 0 to 50 mg/L NH_3-N, Salicylate Method	
	Nitrate	Mid-Range, 0 to 5.0 mg/L NO_3^--N, Cadmium Reduction Method, Using Powder Pillows	
		Mid-Range, 0 to 5.0 mg/L NO_3^--N, Cadmium Reduction Method, Using AccuVac Ampuls	
		High Range, 0 to 30.0 mg/L NO_3^--N, Cadmium Reduction Method, Using Powder Pillows	
		High Range, 0 to 30.0 mg/L NO_3^--N, Cadmium Reduction Method, Using AccuVac Ampuls	
		High Range, Test 'N Tube, 0 to 30.0 mg/L, NO_3^--N, Chromotropic Acid Method	
	Phosphorus	Reactive, 0.00 to 5.00 mg/L PO_4^{3-}, PhosVer 3 Method, Test 'N Tube Procedure	
		Reactive, 0 to 30.0 mg/L PO_4^{3-}, Amino Acid Method	
		Reactive, 0 to 2.5 mg/L PO_4^{3-}	
		Reactive, 0 to 45.0 mg/L PO_4^{5-}, Molybdovanadate Method, Using Reagent Solution	
		Reactive, 0 to 45.0 mg/L PO_4^{5-}, Molybdovanadate Method, Using AccuVac Ampuls	

Notes:

Appendix C:
Public Education and Outreach Campaigns and Activities

Education and Outreach Activities- July 1, 2013-June 30, 2014		
Date	**Activity**	**Notes**
August 28, 2013	Class presentation and tour	Explained BMPs to class of 50+ students
October 5, 2013	Stream Clean Up	Collected 75 pounds of garbage and 46 pounds of recyclables
April 12, 2014	Stream Clean Up	Collected 210.45 pounds of garbage and 114.91 pounds of recyclables
July 21, 2014	Kiosk	Hand out Mason LD brochures with facts about stormwater to students, faculty, and staff on campus.
July 22, 2014	Kiosk	Hand out Mason LD brochures with facts about stormwater to students, faculty, and staff on campus.
July 24, 2014	Kiosk	Hand out Mason LD brochures with facts about stormwater to students, faculty, and staff on campus.
July 29, 2014	Kiosk	Hand out Mason LD brochures with facts about stormwater to students, faculty, and staff on campus.

Figure 1


GEORGE MASON UNIVERSITY Land Development
The Land Development Team at George Mason University seeks to alert homeowners, students, and staff on the impacts of stormwater runoff on water quality through free training sessions, workshops and distributions of educational materials. The public outreach program at Mason also provides guidance on how the community can help in minimizing adverse impacts of urban runoff in waterways.
NO DUMPING
GEORGE MASON UNIVERSITY
DRAINS TO CHESAPEAKE
George Mason University
4400 University Drive, MS 1E4
Fairfax, Virginia 22030
STORMWATER MANAGEMENT
George Mason University marks all inlets around all three main campuses with this drainage marker
CONTACT
MasonLD@gmu.edu
http://facilities.gmu.edu
STORMWATER MANAGEMENT
Stormwater runoff is rainwater that doesn't soak into the ground. The rain that runs off is often washed pollutants from impervious surfaces like parking lots, streets, and gutters into the storm drain system, which then flows into our streams, ponds, and bays. Storm water can flow into a storm sewer system or directly to a stream, wetland, river, or pond. Anything that enters a storm sewer system is discharged untreated into these bodies.
EROSION AND SEDIMENT CONTROL
Erosion and Sediment Control and Stormwater Man agement Programs are integral components of GMU's design, construction, maintenance, and management of the university's facilities and campuses.
HOW DOES STORMWATER MANAGEMENT WORK?
Under natural conditions, rainwater is dissipated through the processes of transpiration, evaporations and percolation. Through transpiration, a large quantity of water is intercepted by plant foliage and evaporates back into the atmosphere. the remaining water that reaches the surface of ground infiltrates into the soils and through percolation, continues to travel under ground until it slowly makes its way into the streams and aquifers.
As water seeps into the ground the process of percola tion also allows for the removal of pollutants present in stormwater. The ability of water to seep into the ground, as well as, the amount of water that can be retained depends on soil properties such as porosity and permeability. A high porosity soil can hold large amounts of water and usually allows for rapid infiltra tion. When precipitation reaches the soil surface faster than it can be infiltrated into the ground, water collects at the surface and travels downhill.
WHY IS STORMWATER MANAGEMENT NECESSARY?
As more land cover is replaced with impervious sur faces, less rain can be naturally absorbed and treated by the environment. After development, stormwa ter discharges can increase by more that twice the amount under natural conditions. If not controlled, large quantities of water can cause flooding in our communities and stream channel erosion. Stormwa ter Management's policies are necessary in order to address impacts of urbanization on water resources, minimize flood damage, and significant erosion of channel bed and banks.
RUNOFF FROM ROOF
LAWN RUNOFF
GUTTER RUNOFF
STREET RUNOFF
STREET RUNOFF
STORMWATER RUNOFF ENDS UP IN LOCAL STREAMS, CREEKS, RIVERS AND LAKES.

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Proposed Education and Outreach Activities 2014-2018	
Activity	**Goal**
Bi-annual Stream Clean Up	Clean every stream on campus.
Information Stations around Campus	Increase awareness and public education on high-priority water quality issues by using kiosks in commonly occupied buildings on campus.
Guest Lecture	Attend more classes to teach students the importance on high-priority water quality issues and reducing waste on campus.

Appendix D:
Schedule of MS4 Program Plan Updates Required

Schedule of MS4 Program Plan Updates Required			
Program Update Requirement	**Permit Reference**	**Update Completed By**	**Where added in Appendix A**
Public Education Outreach Plan (MCM 1)	Section II B 1	12 months after permit coverage	MCM 1.b-g Pages 9-15 Also in Appendix C
Illicit Discharge Procedures (MCM 3)	Section II B 3		MCM 3.e Page 22 Also in Appendix E
Individual Residential Lot Special Criteria (MCM 5)	Section II B 5 c (1) (d)		MCM 5.c.1-2 Page25 Also in Appendix H
Operator-Owned Stormwater Management Inspection Procedures (MCM 5)	Section II B 5		MCM 5.d Pages 25-28 Also in Appendix H
Identification of Locations Requiring SWPPPs (MCM 6)	Section II B 6 b		MCM 6.b.1-2 Page 36
Nutrient Management Plan (NMP) Locations (MCM 6)	Section II B 6 c (1) (a)		MCM 6.c.1 (a) Page 37 Appendix K
Training Schedule and Program (MCM 6)	Section II B 6		MCM 6.c.1 (b) Page 37

Updated TMDL Action Plans	Section I B	24 months after permit coverage	Not added in Appendix A. Will be complete in 2015.
Chesapeake Bay TMDL Action Plan	Section I C		Not added in Appendix A. Will be complete in 2015.
Stormwater Management Progressive Compliance and Enforcement (MCM 4)	Section II B 5		MCM 5 Pages 24-28
Daily Good housekeeping Procedures (MCM 6)	Section II B 6 a		MCM 6.a.1-8 Page 35
Other TMDL Action Plans for applicable TMDLs approved between June 2008 and June 2013	Section I B	36 months after permit coverage	Not added in Appendix A. Will be complete in 2015.
Outfall Map Completed (MCM 3)	Section II B 3 a (3)	48 months after permit coverage	MCM 3.a.3-5 Page 19
SWPPP Implementation (MCM 6)	Section II B 6 b (3)		MCM 6.b.3 Page 36
NMP Implementation (MCM 6)	Section II B 6 c (1) (b)	60 months after permit coverage	MCM 6.c.1 (b) Page 37

Appendix E:
Illicit Discharge Detection and Elimination Program

universitypolicy.gmu.edu http://universitypolicy.gmu.edu/policies/illicit-discharge-detection-and-elimination/

Illicit Discharge Detection and Elimination

University Policy Number 1409

Categorized: General Policies

Responsible Office: Environmental Health and Safety

Policy Procedure:

- George Mason University MS4 Program Plan

Related Law & Policy:

- Virginia Stormwater Management Program (VSMP) Permit Regulations 4VAC50-60-10 et seq.
- Clean Water Act 33 U.S.C. §1251 et seq.
- Policy 1406: Environmental Health and Safety
- Policy 1408: Environmental Management and Sustainability System

I. PURPOSE AND SCOPE

The purpose of this policy is to provide for the health, safety, and general welfare of the students, staff and visitors of George Mason University through the regulation of non-storm water discharges to the storm drainage system to the maximum extent practicable as required by federal and state law. This policy establishes methods for controlling the introduction of pollutants into the municipal separate storm sewer system (MS4) in order to comply with requirements of Virginia Stormwater Management Program permit for George Mason University.

II. DEFINITIONS

"Best Management Practices" (BMPs) means schedules of activities, prohibitions of practices, general good housekeeping practices, pollution prevention and educational practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants directly or indirectly to storm water, receiving waters, or storm water conveyance systems. BMPs also include treatment practices, operating procedures, and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw materials storage.

"De Minimis" means small, minor, or insignificant spills of materials that occur during normal material handling operations (e.g., spills from unloading or transfer of materials, leaks from pipes or valves, minor leaks of process equipment, etc.).

"Hazardous Materials" means any material, including any substance, waste, or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

"Illegal Discharge" means any direct or indirect non-storm water discharge to the storm drain system, except as exempted in Section III of this policy.

"Municipal Separate Storm Sewer System" (MS4) means the system of conveyances (including, roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) owned and operated by George Mason University and designed or used for collecting or conveying storm water, and that is not used for collecting or conveying sewage.

"Non-Storm Water Discharge" means any discharge to the storm drain system that is not composed entirely of storm water.

"Pollutant" means anything which causes or contributes to pollution. Pollutants may include, but are not limited to: paints, varnishes, and solvents; oil and other automotive fluids; non-hazardous liquid and solid wastes and yard wastes; refuse, rubbish, garbage, litter, or other discarded or abandoned objects, polices, and accumulations, so that same may cause or contribute to pollution; floatables; pesticides, herbicides, and fertilizers; hazardous substances and wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; wasteland residues that result from constructing a building or structure; and noxious or offensive matter of any kind.

"Storm Drainage System" means publicly-owned facilities by which storm water is collected and/or conveyed, including but not limited to any roads with drainage systems, municipal streets, gutters, curbs, inlets, piped storm drains, pumping facilities, retention and detention basins, natural and human-made or altered drainage channels, reservoirs, and other drainage structures.

"Storm Water" means any surface flow, runoff, and drainage consisting entirely of water from any form of natural precipitation, and resulting from such precipitation.

"Wastewater" means any water or other liquid, other than uncontaminated storm water, discharged from a facility.

III. PROHIBITION OF ILLICIT DISCHARGES

No university employee, student, visitor or contractor shall throw, drain, or otherwise discharge, cause, or allow others under its control to throw, drain, or otherwise discharge into the university's storm water drainage system any pollutants or waters containing any pollutants, other than storm water. It is the responsibility of the Offices of Environmental Health and Safety (EHS), Facilities Management and Facilities Project Management and Construction Management to train employees to recognize the hazards associated with illicit discharges and to identify illicit discharge sources. Additionally, Facilities Land Development ("Mason LD") is responsible for performing outfall inspections and surveys, including observation, documentation, and sampling (if deemed necessary).

The commencement, conduct, or continuance of any illegal discharge to the storm drain system is prohibited except as described as follows:

1. The following discharges are exempt as they are considered to be not significant contributors of pollutants to the MS4: water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration, uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, flows from riparian habitats and wetlands, de-chlorinated swimming pool discharges, street wash water and flows that have been identified in writing by Virginia's Department of Environmental Quality as de minimis discharges that are not significant sources of pollutants to state waters and not requiring a VPDES permit.

2. Discharges or flow from firefighting, and other discharges specified in writing by Mason LD as being necessary to protect public health and safety.

3. Discharges associated with dye testing; however, this activity requires notification to Mason LD prior to the time of the test.

4. The prohibition shall not apply to any non-storm water discharge permitted under an NPDES permit, waiver, or waste discharge order issued to the discharger and administered under the authority of the United States Environmental Protection Agency (EPA), provided that the discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations, and provided that written approval has been granted for the permitted discharge to the storm drain system.

IV. NOTIFICATION OF SPILLS

Notwithstanding other requirements of law, as soon as any person responsible for a facility or operation, or responsible for emergency response for a facility or operation has information of any known or suspected release of materials, which are resulting or may result in illegal discharges or pollutants discharging into storm water, the storm drain system, or waters of the United States, said person shall take all necessary steps to ensure the discovery, containment, mitigation, and proper reporting of such release.

In the event of a release of non-hazardous materials; said person shall notify EHS within 24 hours via email (safety@gmu.edu), phone (703-993-8448), or by calling University Police, who in turn will contact EHS. If hazardous material of any amount enters a storm sewer; said person shall immediately notify University Police, who will then notify EHS. Failure to provide notification of a release as provided above is a violation of this Policy.

V. COMPLIANCE

A. The university may suspend or cease activities and operations that are not in full compliance with this policy.

B. Whenever George Mason University finds that a violation of this Policy has occurred, EHS may order compliance by written notice to the responsible person. Such notice may require, without limitation:

1. The performance of monitoring, analyses, and reporting;
2. The elimination of prohibited discharges or connections;
3. Cessation of any violating discharges, practices, or operations;
4. The abatement or remediation of storm water pollution or contamination hazards and the restoration of any affected property;
5. Payment of any fee, penalty, or fine assessed against the university to cover remediation cost;
6. The implementation of new storm water management practices; and
7. Disciplinary action up to and including dismissal, where appropriate.

C. Such notification shall set forth the nature of the violation(s) and establish a time limit for correction of these violation(s). Said notice may further advise that, if applicable, should the violator fail to take the required action within the established deadline. EHS will then initiate work orders for the appropriate corrective actions and the violator or university department will be charged for the cost.

D. The remedies listed in this Policy are not exclusive of any other remedies available under any applicable federal, state, or local law.

VI. EFFECTIVE DATE, REVIEW, AND APPROVAL:

This policy will become effective upon the date of approval by the Senior Vice President and Provost. This Policy, and any related procedures, shall be reviewed annually.

Approved:

__/S_____ ___1/22/2013_____
Senior Vice President Date

Approved:

__/S_____ ___1/22/2013_____
Provost Date

Appendix F:
MS4 Internal Outfalls

Map B.1: Internal Outfalls –Fairfax Campus

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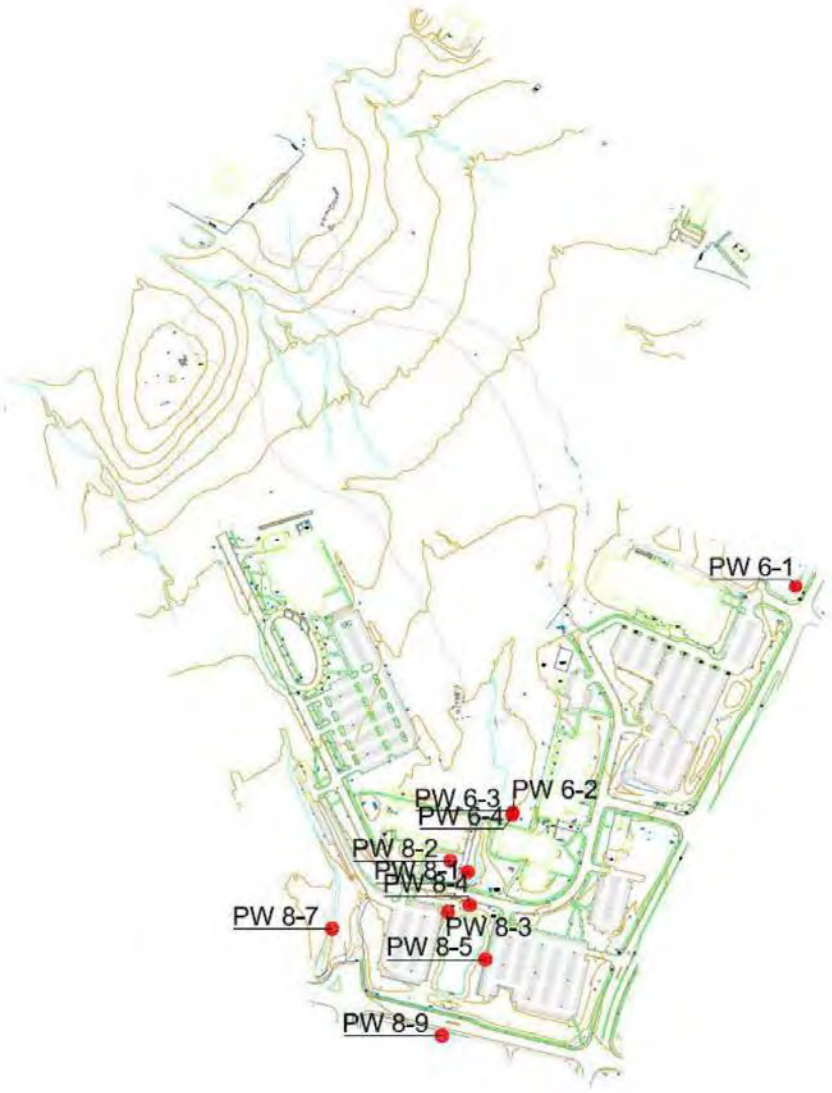
Map B.2: Internal Outfalls –Prince William Campus



Appendix G:
Notice of Potential Interconnected MS4

GEORGE MASON UNIVERSITY

Facilities Project Management & Construction
4400 University Drive - MSN 2A9
Fairfax, VA 22030-4444

703-993-2513
Fax: 703-993-2521
e-mail: shamil13@gmu.edu

August 27, 2014

Fairfax County
DPWES Director's Office
12055 Government Center Pkwy
Fairfax, VA 22035

Subject: MS4 Permit; Notice of Potential Interconnected Stormwater System

Attention: James Patteson, Appointed Director of DPWES

George Mason University (Mason) is a Phase II small MS4 and is covered under the Virginia Stormwater Management Program (VSMP) General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (Registration Number VAR040106).

The purpose of this letter is to notify you of the potential for interconnections between the stormwater system operated by Mason and the stormwater systems that you operate. The MS4 permit requires that Mason notify in writing, any downstream regulated MS4 to which Mason is physically interconnected. We have identified several points where Mason discharges stormwater into your regulated MS4 stormwater system. Please see attached Figure 1: Map of MS4 Interconnectivity. There is no action required on your part at this time, as this letter is for notification purposes only. Please keep this for your records.

If you have any questions or desire additional information related to this subject, please contact me.

S. Keith Hamilton, PE
Director, Project Management & Construction
(703) 993-2513
Email: shamil13@gmu.edu

Sincerely,

S. Keith Hamilton, PE
Director, Project Management & Construction

Attachment(s):
(1) Figure 1: Map of MS4 Interconnectivity

Copy to:

- Tom Calhoun, Mason, Vice President of Facilities
- Leah Maslov, Mason, Land Development
- Elizabeth Anderson, Mason, Land Development

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GEORGE MASON UNIVERSITY

Facilities Project Management & Construction
4400 University Drive - MSN 2A9
Fairfax, VA 22030-4444

703-993-2513
Fax: 703-993-2521
e-mail: shamil13@gmu.edu

August 27, 2014

Prince William County
Watershed Management Branch
5 County Complex Suite 170
Prince William, VA 22192

Subject: MS4 Permit; Notice of Potential Interconnected Stormwater System

Attention: Benjamin Eib, Assistant Branch Chief of Watershed Management

George Mason University (Mason) is a Phase II small MS4 and is covered under the Virginia Stormwater Management Program (VSMP) General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (Registration Number VAR040106).

The purpose of this letter is to notify you of the potential for interconnections between the stormwater system operated by Mason and the stormwater systems that you operate. The MS4 permit requires that Mason notify in writing, any downstream regulated MS4 to which Mason is physically interconnected. We have identified several points where Mason discharges stormwater into your regulated MS4 stormwater system. Please see attached Figure 1: Map of MS4 Interconnectivity. There is no action required on your part at this time, as this letter is for notification purposes only. Please keep this for your records.

If you have any questions or desire additional information related to this subject, please contact me.

S. Keith Hamilton, PE
Director, Project Management & Construction
(703) 993-2513
Email: shamil13@gmu.edu

Sincerely,

S. Keith Hamilton, PE
Director, Project Management & Construction

Attachment(s):
(1) Figure 1: Map of MS4 Interconnectivity

Copy to:

- Tom Calhoun, Mason, Vice President of Facilities
- Leah Maslov, Mason, Land Development
- Elizabeth Anderson, Mason, Land Development

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GEORGE MASON UNIVERSITY

Facilities Project Management & Construction
4400 University Drive - MSN 2A9
Fairfax, VA 22030-4444

703-993-2513
Fax: 703-993-2521
e-mail: shamil13@gmu.edu

August 27, 2014

Department of Transportation
Location and Design Division
1401 East Broad Street
Richmond, VA 23219-2000

Subject: MS4 Permit; Notice of Potential Interconnected Stormwater System

Attention: Roy T. Mills, State Stormwater Program Administrator

George Mason University (Mason) is a Phase II small MS4 and is covered under the Virginia Stormwater Management Program (VSMP) General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (Registration Number VAR040106).

The purpose of this letter is to notify you of the potential for interconnections between the stormwater system operated by Mason and the stormwater systems that you operate. The MS4 permit requires that Mason notify in writing, any downstream regulated MS4 to which Mason is physically interconnected. We have identified several points where Mason discharges stormwater into your regulated MS4 stormwater system. Please see attached Figure 1: Map of MS4 Interconnectivity- Fairfax Campus and Figure 2: Map of MS4 Interconnectivity- Prince William Campus. There is no action required on your part at this time, as this letter is for notification purposes only. Please keep this for your records.

If you have any questions or desire additional information related to this subject, please contact me:

S. Keith Hamilton, PE
Director, Project Management & Construction
(703) 993-2513
Email: shamil13@gmu.edu

Sincerely,

S. Keith Hamilton, PE
Director, Project Management & Construction

Attachment(s):
(1) Figure 1: Map of MS4 Interconnectivity- Fairfax Campus
(2) Figure 2: Map of MS4 Interconnectivity- Prince William Campus

Copy to:

- Tracey Harmon, VDOT, Environmental Quality Division
- Christine Watlington, VDOT, Senior Policy Analyst
- Tom Calhoun, Mason, Vice President of Facilities
- Leah Maslov, Mason, Land Development
- Elizabeth Anderson, Mason, Land Development

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GEORGE MASON UNIVERSITY

Facilities Project Management & Construction
4400 University Drive - MSN 2A9
Fairfax, VA 22030-4444

703-993-2513
Fax: 703-993-2521
e-mail: shamil13@gmu.edu

August 27, 2014

City of Fairfax
City Hall Room 316
10455 Armstrong Street
Fairfax, VA 22030

Subject: MS4 Permit, Notice of Potential Interconnected Stormwater System

Attention: Robert Sisson, City Manager

George Mason University (Mason) is a Phase II small MS4 and is covered under the Virginia Stormwater Management Program (VSMP) General Permit for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (Registration Number VAR040106).

The purpose of this letter is to notify you of the potential for interconnections between the stormwater system operated by Mason and the stormwater systems that you operate. The MS4 permit requires that Mason notify in writing, any downstream regulated MS4 to which Mason is physically interconnected. We have identified several points where Mason discharges stormwater into your regulated MS4 stormwater system. Please see attached Figure 1: Map of MS4 Interconnectivity. There is no action required on your part at this time, as this letter is for notification purposes only. Please keep this for your records.

If you have any questions or desire additional information related to this subject, please contact me:

S. Keith Hamilton, PE
Director, Project Management & Construction
(703) 993-2513
Email: shamil13@gmu.edu

Sincerely,

S. Keith Hamilton, PE
Director, Project Management & Construction

Attachment(s):
(1) Figure 1: Map of MS4 Interconnectivity

Copy to:

- Tom Calhoun, Mason, Vice President of Facilities
- Leah Maslov, Mason, Land Development
- Elizabeth Anderson, Mason, Land Development

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Map A.1: Connectivity Map –Fairfax Campus

Map A.2: Connectivity Map –Prince William Campus

Appendix H:

Current and Future Land Disturbing Projects

Current and Future Land Disturbing Projects							
Project Name	Total Disturbed Area (ac)	Projected Timeline		Location	On-Site Project Manager	Project Description	Number of Inspections
		Start	Finish				
Projects Currently Under Construction							
Roanoke River Road	1.9	Aug-12	Nov- 14	Fairfax	Christy Hogan (571) 226-6485	Campus Entrance	25
Life Science Lab Building	5.2	July-12	Jan-15	Prince William	Micky Boeckl (703) 993-3726	Academic Laboratory Building	5
Fenwick Library	2.3 (?)	Dec-12	Sep-15	Fairfax	Alex Iszard (703) 993-9220	Academic Library	49
West Campus Connector Road	15 (?)	Dec-12	Dec-14	Fairfax	Christy Hogan (571) 226-6485	Road and Grade Separated Crossing	55
Shenandoah Dining	0.5	Aug-13	Sep-14	Fairfax	Nancy Pickens (571) 296-1137	Dining Building	29
Shenandoah Housing	1.5	May-13	Nov-14	Fairfax	Nancy Pickens (571) 296-1137	Student Housing	39
Field House	1.3	Nov-13	Nov-14	Fairfax	Johnny Trejos (571) 480-3124	Athletic Facility	0

2013/2014 Proposed/Potential Future Construction Projects							
Project Name	Approximate Total Disturbed Area (ac)	Projected Timeline		Location	On-Site Project Manager	Project Description	Stormwater Management Component
		Start	Finish				
Academic VII	5.54	April-15	May-17	Fairfax	Micky Boeckl (703) 993-3726	Academic Building	This project is still in the planning stage.
Rappahannock Housing	1	May-16	Sep-18	Fairfax	Nancy Pickens (571) 296-1137	Student Housing	This project is still in the planning stage.
Plant Expansion	0.25	Sep-13	Jun-15	Fairfax	Mike Herman (703) 993-2242	Facilities Building	Stormwater from this expansion will be treated with the rest of the existing plan.
Bull Run Hall	Conceptual 3.5	Jan- 16	Nov-18	Prince William	Micky Boeckl (703) 993-3726	Academic and Research Building	This project is still in the planning stage.
Hilton Performing Arts Addition	2	June-15	June-16	Prince William	Mike Herman (703) 993-2242	Concert Hall	Stormwater from this addition will be treated with the rest of the existing building.

Appendix I:
Notice of Corrective Action

GEORGE MASON UNIVERSITY
Facilities Construction Office
4400 University Drive – Mail Stop 2C1
Fairfax, Virginia 22030-4444

(p): 703-993-4051
(c): 571-265-1977
Fax:703-993-2521

August 19, 2013

Bright Construction Group
2812 Old Lee Hwy, STE 200A
Fairfax, VA 22031
Attn: Juan Padilla, Project Manager

Re: Sub II Presidents Park Pedestrian Path [PC: 247-145784]
VESCL Notice of Corrective Action (NOCA)

Dear Mr. Padilla:

On August 13, 2013 George Mason University staff inspected the Sub II Presidents Park Pedestrian Path site (permit #ES-145784) for compliance with the Virginia Erosion and Sediment Control Law (VESCL). A copy of the resulting report is attached to this letter.

At the August 8, 2013 progress meeting for the above referenced project, the following issues regarding E&S closeout items were also discussed:

- Need for permanent shady seed mix
- Removal of super silt fence contingent upon full stabilization
- Need for stabilization underneath the bridge (plantings per Addendum #1)

Bright Masonry proceeded to disregard all direction provided by Mason with respect to the remaining E&S site issues. Instead:

- Bright Masonry failed to submit a shady seed mix for approval.
- Bright Masonry prematurely removed the super silt fence before approval by Mason LD
- Bright Masonry failed to submit a shade tolerant ground cover for approval. Instead, English ivy (a non-native planting) was planted in undesirable locations

This letter shall serve as your official Notice to Comply. As such, you have 72 hours to stabilize your site in accordance with the VESCL and GMU Annual Standards and Specifications.

If the discrepancies described above cannot be resolved to the satisfaction of Mason LD within the time allotted or continue to be issues in the future, Mason LD has the authority to immediately pursue formal enforcement action. Mason has contacted the Department of Environmental Quality to inform them of this matter. Failure to provide corrective action by 22 August 2013 may result in additional enforcement action through the Department of Environmental Quality.

Sincerely,

Robbie Houser
Erosion and Sediment Control and Stormwater Administrator

Attachment:
(1) E&S Reports dated 13 August 2013

Copy to:
- Robert Endebrock, Mason
- Brad Glatfelter, Mason
- Christy Hogan, Mason
- Andrew Harms, Mason
- Troy Smith, DEQ

Appendix J:
Permanent Stormwater Management Facilities

Inventory of Permanent Stormwater Management Facilities

Facility Name	Type	Location	HUC 12 Code	Virginia Code	Discharging Surface Waters	Drainage area (acres)	Facility size (acres)	BMP Efficiency (%)	TMDL	WQ Treatment Area (acres)	Geographic Coordinates
Braddock Road Pond	Wet Pond	East Fairfax Campus	020700100401	PL29	Pohick Creek	315	~1.40 ac-ft	40	N/A	159.9	38.825243, -77.303450
Mason Pond	Wet Pond	East Fairfax Campus	020700100401	PL29	Pohick Creek	137	~9.79 ac-ft	50	N/A	163.02	38.828948, -77.310392
Rivanna Basin	Dry Pond	East Fairfax Campus	020700100401	PL29	Pohick Creek	28.12	28.12	N/A	N/A	Quantity Only	38.832147, -77.303623
Krasnow Pond	Dry Pond	East Fairfax Campus	020700100401	PL29	Pohick Creek	8.5	3.06	44.08	N/A	8.52	38.831.439, -77.299742
Masonvale Pond	Dry Pond	East Fairfax Campus	020700100401	PL29	Pohick Creek	17.4	8.83	35	N/A	6.99	38.832049, -77.299455
West Campus Pond	Dry Pond	West Campus	020700100705	PL46	Lower Bull Run	46.98		40	N/A		38.831387, -77.324588
PW Pond	Wet Pond	Prince William Campus	020700100504	PL34	Broad Run-Rocky Branch	70.53		50	N/A		38.755797, -77.522198
Roanoke SWM pond	Dry Pond	East Fairfax Campus	020700100401	PL29	Pohick Creek	4.98	0.37	40	N/A	0.92	38.826520, -77.311293
MHI Rain Garden #1	Rain Garden	Masonvale Ph. 2	020700100401	PL29	Pohick Creek	0.12	0.002	50	N/A	0.9	38.834585, -77.299988
MHI Rain Garden #2	Rain Garden	Masonvale Ph. 2	020700100401	PL29	Pohick Creek	0.08	0.002	50	N/A	0.6	38.833592, -77.299156
MHI Rain Garden #3	Rain Garden	Masonvale Ph. 2	020700100401	PL29	Pohick Creek	0.2	0.002	50	N/A	0.16	38.834441, -77.298927
Piedmont Rain Garden #1	Rain Garden	East Fairfax Campus	020700100401	PL29	Pohick Creek	0.04	0.01	50	N/A	0.02	38.832089, -77.306059
Piedmont Rain Garden #2	Rain Garden	East Fairfax Campus	020700100401	PL29	Pohick Creek	0.045	0.006	50	N/A	0.04	38.832404, -77.306244
Permeable Pavers	Permeable Surface	Masonvale Ph. 1 & 2	020700100401	PL29	Pohick Creek	4.6	.09	40	N/A	4.6	38.833084, -77.301103
Eastern Shore bike rack	Pervious Surface	East Fairfax Campus	020700100401	PL29	Pohick Creek	0.01011	0.01011	45	N/A	0	38.833318, -77.304331
Hampton Roads bike rack	Pervious Surface	East Fairfax Campus	020700100401	PL29	Pohick Creek	0.00984	0.00984	45	N/A	0	38.834022, -77.305071
Piedmont infiltration trench	Infiltration Trench	East Fairfax Campus	020700100401	PL29	Pohick Creek	0.05	0.006	50	N/A	0.03	38.832406, -77.306177
Bio-Swale #1	Bio-Swale	ACAD V X-Walk	020700100401	PL29	Pohick Creek	0.6	0.04	35	N/A	0.15	38.827410, -77.306680

Bio-Swale #2	Bio-Swale	Prince William Campus	020700100504	PL34	Broad Run-Rocky Branch	1.52	0.13237	40	N/A	0	38.758298, -77.523085
Potomac Heights infiltration trench	Infiltration Trench	East Fairfax Campus	020700100401	PL29	Pohick Creek	0.100069	0.00846	50	N/A	0.024313	38.826544, -77.302922
Research Hall Green Roof	Green Roof	East Fairfax Campus	020700100401	PL29	Pohick Creek	0.0149	0.019	50	N/A	0	38.828800, -77.305494

Appendix K:
Nutrient Management Plan

George Mason University's Nutrient Management Plan is a low impact lawn program designed to achieve a minimum impact on the watershed environment and at the same time maintain a nice lawn. Valley Crest is Currently contrated to apply fertilizer four times a year providing a total minimum of four pounds of actual nitrogen applied per 1000 ft^2 turf.

Area needing Fertilizer	Break down of Fertilizer (Nitrogen – Phosphoras – Potassium)
Fertilizer for Turf	18 – 6 – 12
Broad Leaf Evergreens	0 – 10 – 10
Tree and Flowering Ordimentals	Fertilized by deep root feeding
Shrubs and Ground Cover	10 – 10 – 10

Nitrogen content should be from a control release source to avoid runoff. Pre emergent herbisides are to be applied once in mid April. Post emergent herbisides are applied twice- once in early May and a second time in either September or October. Post emergent applications of Round Up are applied as needed. In an effort to minimumze the amount of surface runoff, the contractor has developed and implements an IPM (Integrated Pest Management) program for the control of all insects and diseses for all turf, ordimental trees, shrubs, and ground covers. All testing is done by A & L Eastern Laboratories.

Map C.1: Nutrient Management Plan –Land Use

Map C.2: Nutrient Management Plan –Landscape Management Zones